CERTIFICATE

Issued Date: Aug. 03, 2011
Report No. : 117394R-ITCEP07V06

This is to certify that the following designated product

Product : Personal Computer
Trade name : msi
Model Number : MS-B025
Company Name : MICRO-STAR INT'L Co., LTD.

This product, which has been issued the test report listed as above in QuieTek Laboratory, is based on a single evaluation of one sample and confirmed to comply with the requirements of the following EMC standard.

EN 55022:2006+A1: 2007, Class B
EN 61000-3-2:2006+A2: 2009
EN 61000-3-3:2008

EN 55024: 1998+A1: 2001+A2: 2003
IEC 61000-4-2: 2008
IEC 61000-4-3: 2010
IEC 61000-4-4: 2011
IEC 61000-4-5: 2005
IEC 61000-4-6: 2008
IEC 61000-4-8: 2009
IEC 61000-4-11: 2004

TEST LABORATORY

Vincent Lin / Manager

QuieTek No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL:+886-2-8601-3788 FAX:+886-2-8601-3789 Email:service@quietek.com http://www.quietek.com

CE

Test Report

Product Name ： Personal Computer

Model No. ： MS-B025

Applicant ： MICRO-STAR INT'L Co., LTD.

Address ： No. 69, Li-De St., Jung-He District, New Taipei City, Taiwan

Date of Receipt ： 2011/07/25

Issued Date ： 2011/08/03

Report No. ： 117394R-ITCEP07V06

Report Version ： V1.0

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, NVLAP or any agency of the Government.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

CE

Declaration of Conformity

We herewith confirm the following designated products to comply with the requirements set out in the Council Directive on the approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (2004/108/EC) with applicable standards listed below.

Product	: Personal Computer
Trade name	: msi
Model Number	: MS-B025
Applicable Harmonized	: EN 55022: 2006+A1: 2007, Class B
Standards under Directive	EN 55024: 1998+A1: 2001+A2: 2003
2004/108/EC	EN 61000-3-2:2006+A2: 2009
	EN 61000-3-3:2008

Company Name : _____

Company Address : _____

Telephone : _____ Facsimile : _____

Person in responsible for marking this declaration:

_____ _____

Name (Full Name) Title/ Department

_____ _____

Date Legal Signature

Accredited by NVLAP, TAF-CNLA, DNV, TUV, Nemko

Date: Aug. 03, 2011
QTK No.: 117394R-ITCEP07V06

CE

Statement of Conformity

This statement is to certify that the designated product below.

Product	: Personal Computer
Trade name	: msi
Model Number	: MS-B025
Company Name	: MICRO-STAR INT'L Co., LTD.
Applicable Standards	: EN 55022: 2006+A1: 2007, Class B
	EN 55024: 1998+A1: 2001+A2: 2003
	EN 61000-3-2:2006+A2: 2009
	EN 61000-3-3:2008

One sample of the designated product has been tested and evaluated in our laboratory to find in compliance with the applicable standards above. The issued test report(s) show(s) it in detail.

Report Number : 117394R-ITCEP07V06

TEST LABORATORY

Vincent Lin / Manager

The verification is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. Logo.

Quietek Corporation / No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
Tel: 866-2-8601-3788, Fax: +886-2-8601-3789, E-mail: service@quietek.com

Test Report Certification

Issued Date : 2011/08/03
Report No. : 117394R-ITCEP07V06

Product Name	:	Personal Computer
Applicant	:	MICRO-STAR INT'L Co., LTD.
Address	:	No. 69, Li-De St., Jung-He District, New Taipei City, Taiwan
Manufacturer	:	MICRO-STAR INT'L Co., LTD.
Model No.	:	MS-B025
EUT Rated Voltage	:	AC 100-240V, 50-60Hz
EUT Test Voltage	:	AC 230 V / 50 Hz
Trade Name	:	msi
Applicable Standard	:	EN 55022: 2006+A1: 2007, Class B EN 55024: 1998+A1: 2001+A2: 2003 EN 61000-3-2:2006+A2: 2009 EN 61000-3-3:2008
Test Result	:	Complied
Performed Location	:	Quietek Corporation (Linkou Laboratory) No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C. TEL:+866-2-8601-3788 / FAX:+886-2-8601-3789

Documented By : Anny Chou
(Adm.Assistant / Anny Chou)

Reviewed By : Harrison Chen
Engineer / Harrison Chen)

Approved By :
(Manager / Vincent Lin)

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scopes:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
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TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0

Testing Laboratory 1313

LinKou Testing Laboratory :
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TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0

Testing Laboratory 0914

Suzhou (China) Testing Laboratory :
No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou,China.
TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0

Testing Laboratory 1596

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1. General Information

1.1. EUT Description

Product Name	Personal Computer
Trade Name	msi
Model No.	MS-B025

Keyparts List		
Item	**Vendor**	**Model Name**
Motherboard		
MSI	MS-7744	
CPU		
Core i3	Intel	I3-2100,INTEL/CM8062301061600(SR05C),3.1GHz,LGA-1155pin
	Intel	I3-2120,INTEL/CM8062301044204(SR05Y),3.3GHz,LGA-1155pin
	Intel	I3-2105,INTEL/CM8062301090600(QAHQ),3.1GHz,LGA-1155pin
core i5	Intel	I5-2400S,INTEL/CM8062300835404(SR00S),2.5GHz,LGA-1155pin
	Intel	I5-2500, INTEL/CM8062300834106(SR00Q),3.3GHz,LGA-1155pin
	Intel	I5-2310,INTEL/CM8062301043700(Q1MM),2.9GHz,LGA-1155pin
Pentium	Intel	DUAL CORE G620,INTEL/CM8062301046304(SR05R),2.6GHz,FCLGA-1155pin
	Intel	G840,INTEL/CM8062301046104(Q1FU),2.8GHz,LGA-1155pin
	Intel	G850,INTEL/CM8062301046204(Q1FW),2.9GHz,LGA-1155pin
	Intel	G620T,INTEL/CM8062301046504(Q1G2),2.2GHz,LGA-1155pin
3.5" HDD		
160GB	WD	3.5inch,160GB,7200RPM,WESTERN DIGITAL/WD1600AAJS
320GB	WD	3.5 inch,320GB,7200RPM,WESTERN DIGITAL/WD3200AAJS
	WD	3.5 inch,320GB,7200RPM,WESTERN DIGITAL/WD3200AAKX
500G	WD	3.5 inch,500GB,7200RPM,WESTERN DIGITAL/WD5000AAKX
	Seagate	3.5 inch,500GB,7200RPM,SEAGATE/ST3500413AS
640G	WD	3.5 inch,640GB,7200RPM,WESTERN DIGITAL/WD6400AAKS
1TB	WD	3.5 inch,1TB,5400RPM+,WESTERN DIGITAL/WD10EARS
	WD	3.5 inch,1TB,7200RPM,WESTERN DIGITAL/WD10EALX
	Seagate	3.5 inch,1TB,7200RPM,SEAGATE/ST31000524AS
1.5TB	WD	3.5 inch,1.5TB,5400RPM+,WESTERN DIGITAL/WD15EARS
	WD	3.5 inch,1.5TB,5400RPM+,WESTERN DIGITAL/WD15EARX
	Seagate	3.5 inch,1.5TB,5900RPM,SEAGATE/ST1500DL001
2TB	WD	3.5 inch,2TB,5400RPM+,WESTERN DIGITAL/WD20EARS
	WD	3.5 inch,2TB,5400RPM+,WESTERN DIGITAL/WD20EARX
DDR3 Long DIMM		
4G	DDR3 SDRAM,4GB,667(1333)MHz	
5.25" ODD		
SUPER MULTI	PLDS	DH-24ABS-02

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode			
Mode 1 Mode 2 Mode 3 Mode 4	Mode 5 Mode 6 Mode 7 Mode 8	Mode 9 Mode 10 Mode 11 Mode 12	Mode 13 Mode 14 Mode 15 Mode 16
Final Test Mode			
Emission	Mode 1		

ITEM	Mode 1	Mode 2
Display	DVI+HDMI 1920*1200/60Hz	DVI+D-SUB 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I5-2500,3.3GHz	INTEL/I3-2100,3.1GHz
HDD	WESTERN DIGITAL WD5000AAKX	WESTERN DIGITAL WD1600AAJS
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 3	Mode 4
Display	DVI+HDMI 1920*1200/60Hz	DVI+HDMI 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I3-2120,3.3GHz	INTEL/I3-2105,3.1GHz
HDD	WESTERN DIGITAL WD3200AAJS	WESTERN DIGITAL WD3200AAKX
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 5	Mode 6
Display	DVI+HDMI 1920*1200/60Hz	DVI+HDMI 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I5-2400S,2.5GHz	INTEL/I5-2310,2.9GHz
HDD	WESTERN DIGITAL WD5000AAKX	SEAGATE ST3500413AS
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 7	Mode 8
Display	DVI+D-SUB 1920*1200/60Hz	DVI+D-SUB 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/G620,2.6GHz	INTEL/G840,2.8GHz
HDD	WESTERN DIGITAL WD6400AAKS	WESTERN DIGITAL WD10EARS
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 9	Mode 10
Display	DVI+HDMI 1920*1200/60Hz	DVI+HDMI 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/G850,2.9GHz	INTEL/G620T,2.2GHz
HDD	WESTERN DIGITAL WD10EALX	WESTERN DIGITAL WD10EALX
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 11	Mode12
Display	DVI+HDMI 1920*1200/60Hz	DVI+D-SUB 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I5-2500,3.3GHz	INTEL/I5-2500,3.3GHz
HDD	SEAGATE ST31000524AS	WESTERN DIGITAL WD15EARS
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 13	Mode 14
Display	DVI+D-SUB I 1920*1200/60Hz	DVI+HDMI 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I5-2500,3.3GHz	INTEL/I5-2500,3.3GHz
HDD	WESTERN DIGITAL WD15EARX	SEAGATE ST1500DL001
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

ITEM	Mode 15	Mode 16
Display	DVI+HDMI 1920*1200/60Hz	DVI+HDMI 1920*1200/60Hz
MB	MSI/MS-7744	MSI/MS-7744
CPU	INTEL/I5-2500,3.3GHz	INTEL/I5-2500,3.3GHz
HDD	WESTERN DIGITAL WD20EARS	WESTERN DIGITAL WD20EARX
ODD	PLDS/DH-24ABS-02	PLDS/DH-24ABS-02
POWER	FSP/FSP270-60MSP	FSP/FSP270-60MSP
	DDR3 Long DIMM 1G,2G,4G	DDR3 Long DIMM 1G,2G,4G

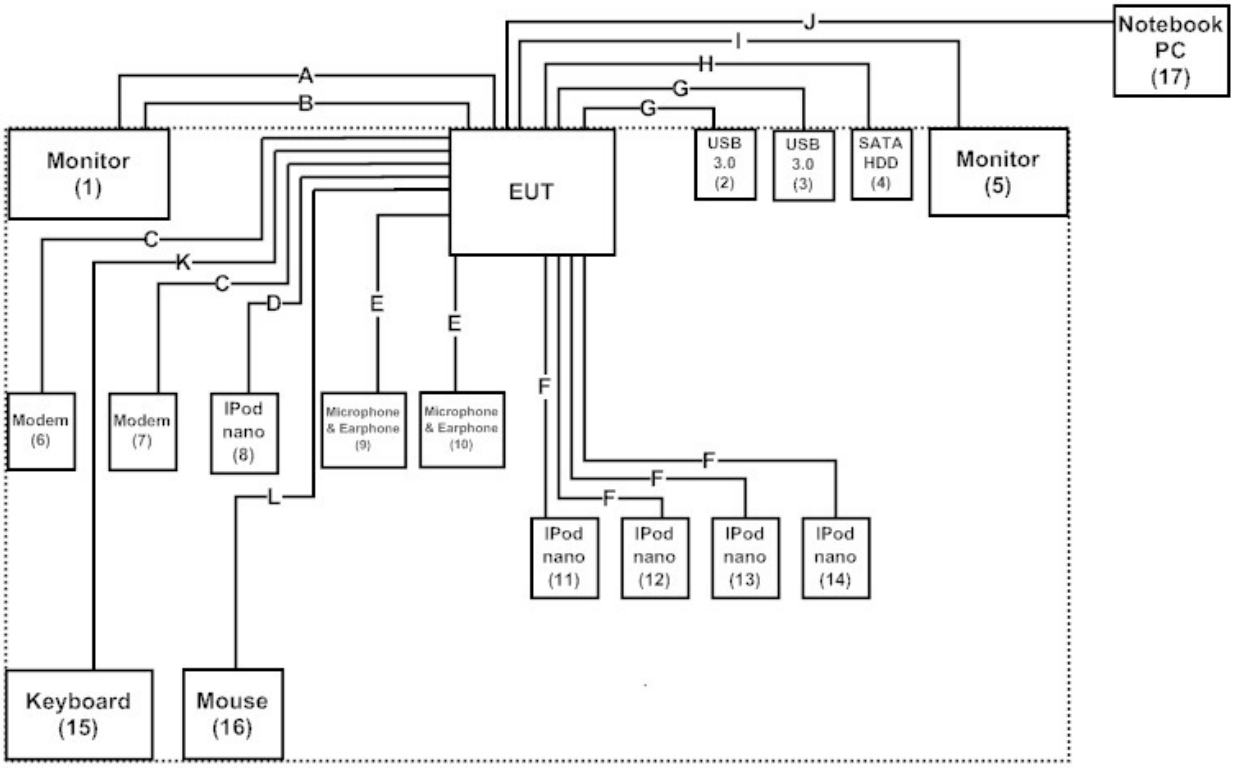
1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Monitor (EMI)	DELL	U2410	CN-0J257M-728-01I-04PL	Non-Shielded, 1.8m
	Monitor (EMS)	LG	W2261VT	907YHPB07296	Non-Shielded, 1.8m
2	USB 3.0	BUFFALO	HD-H1.0TU3	15476991119601	N/A
3	USB 3.0	BUFFALO	HD-H1.0TU3	15476991119984	N/A
4	SATA HDD	Onnto	ST-M10	A01926-F03-0006	N/A
5	Monitor (EMI)	Dell	2407WFPb	CN-0FC255-46633-638-1MDS	Non-Shielded, 1.8m
	Monitor (EMS)	LG	W2261VT	907YHZK07303	Non-Shielded, 1.8m
6	Modem	ACEEX	DM-1414	0102027550	N/A
7	Modem	ACEEX	DM-1414	0102027554	N/A
8	IPod nano (EMI)	Apple	A1236	YM823SUQY0P	N/A
	IPod nano (EMS)	Apple	A1199	YM708A72VQ5	N/A
9	Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
10	Microphone & Earphone	Ergotech	ET-E201	N/A	N/A
11	IPod nano (EMI)	Apple	A1236	YM823SWVY0P	N/A
	IPod nano (EMS)	Apple	A1199	YM706LSCVQ5	N/A
12	IPod nano (EMI)	Apple	A1236	7K823E51Y0P	N/A
	IPod nano (EMS)	Apple	A1199	YM7088TVVQ5	N/A
13	IPod nano (EMI)	Apple	A1236	7L8221XGY0P	N/A
	IPod nano (EMS)	Apple	A1199	5U7047U8VQ5	N/A
14	IPod nano (EMI)	Apple	A1236	7L8221YEY0P	N/A
	IPod nano (EMS)	Apple	A1199	YM709RBUVQ5	N/A
15	Keyboard	Logitech	Y-SAL85	SY917UK	N/A
16	Mouse	Logitech	M-SBM96B	810-000440	N/A
17	Notebook PC	DELL	D630	00144-023-351-283	Non-Shielded, 1.8m

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	D-SUB Cable	Shielded, 1.8m with two ferrite cores bonded
B	HDMI Cable	Shielded, 1.6m
C	RS-232 Cable	Shielded, 1.6m, two PCS
D	Audio Cable	Non-Shielded, 1.6m
E	Earphone & Microphone Cable	Non-Shielded, 1.6m, two PCS
F	USB Cable	Shielded, 1.2m, four PCS
G	USB 3.0 Cable	Shielded, 1.0m, two PCS
H	SATA Cable	Shielded, 1.2m
I	DVI Cable	Shielded, 1.8m with two ferrite cores bonded
J	LAN Cable	Non-Shielded, 3.0m
K	Keyboard Cable	Shielded, 1.8m
L	Mouse Cable	Shielded, 1.8m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	Personal Computer reads data from disk.
4	Personal Computer sends “H” pattern to monitor.
5	Connect LAN to Personal Computer for transmitting data.
6	Run Windows Media Player program and play a disk with color Bar pattern.
7	Repeat the above procedure (4) to (6).

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	EN 55022: 2006+A1: 2007	Yes	No
Impedance Stabilization Network	EN 55022: 2006+A1: 2007	Yes	No
Radiated Emission	EN 55022: 2006+A1: 2007	Yes	No
Power Harmonics	EN 61000-3-2:2006+A2: 2009	Yes	No
Voltage Fluctuation and Flicker	EN 61000-3-3:2008	Yes	No

Immunity			
Performed Item	Normative References	Test Performed	Deviation
Electrostatic Discharge	IEC 61000-4-2: 2008	Yes	No
Radiated susceptibility	IEC 61000-4-3: 2010	Yes	No
Electrical fast transient/burst	IEC 61000-4-4: 2011	Yes	No
Surge	IEC 61000-4-5: 2005	Yes	No
Conducted susceptibility	IEC 61000-4-6: 2008	Yes	No
Power frequency magnetic field	IEC 61000-4-8: 2009	Yes	No
Voltage dips and interruption	IEC 61000-4-11: 2004	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCS 30	100366	2010/11/10
LISN	R&S	ENV4200	833209/007	2010/09/06
LISN	R&S	ENV216	100085	2011/02/10
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2010/09/02

Impedance Stabilization Network / SR1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Capacitive Voltage Probe	Schaffner	CVP2200A	18331	2010/11/15
EMI Test Receiver	R&S	ESCS 30	100366	2010/11/10
LISN	R&S	ENV216	100085	2011/02/10
LISN	R&S	ENV4200	833209/007	2010/09/06
Pulse Limiter	R&S	ESH3-Z2	357.88.10.52	2010/09/02
RF Current Probe	FCC	F-65 10KHz~1GHz	198	2010/11/08
BALANCED TELECOM ISN	FCC	FCC-TLISN-T2-02	20316	2011/07/08
BALANCED TELECOM ISN	FCC	FCC-TLISN-T4-02	20317	2011/07/08
BALANCED TELECOM ISN	FCC	FCC-TLISN-T8-02	20319	2011/07/08

Radiated Emission / Site1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Bilog Antenna	Schaffner Chase	CBL6112B	2918	2011/07/28
EMI Test Receiver	R&S	ESCS 30	100121	2010/12/06
Pre-Amplifier	QTK	N/A	N/A	2011/07/07
CXA Signal Analyzer	Agilent	N9000A	MY50510072	2011/02/10

Radiated Emission / 9x6x6_Chamber

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESIB26	838786/004	2011/06/29
Horn Antenna	Schwarzbeck	9120D	576	2010/11/12
Pre-Amplifier	QuieTek	AP-180C	CHM/071920	2010/08/04

Power Harmonics / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2010/09/06
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2010/09/06

Voltage Fluctuation and Flicker / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AC Power Source(Harmonic)	Schaffner	NSG 1007	HK54148	2010/09/06
IEC1000-4-X Analyzer(Flicker)	Schaffner	CCN 1000-1	X7 1887	2010/09/06

Electrostatic Discharge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
ESD Simulator System	Noiseken	TC-815R	ESS09Z9758	2011/03/28
Horizontal Coupling Plane(HCP)	QuieTek	HCP AL50	N/A	N/A
Vertical Coupling Plane(VCP)	QuieTek	VCP AL50	N/A	N/A

Radiated susceptibility / CB5

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
AF-BOX	R&S	AF-BOX ACCUST	100007	N/A
Audio Analyzer	R&S	UPL 16	100137	2011/05/09
Biconilog Antenna	EMCO	3149	00071675	N/A
Directional Coupler	A&R	DC 6180	22735	N/A
Dual Microphone Supply	B&K	5935	2426784	2011/04/21
Mouth Simulator	B&K	4227	2439692	2011/04/21
Power Amplifier	A&R	30S1G3	309453	N/A
Power Amplifier	A&R	100W10000M7	A285000010	N/A
Power Amplifier	SCHAFFNER	CBA9413B	4020	N/A
Power Amplifier	AR	75A250A	0325371	N/A
Power Meter	R&S	NRVD(P.M)	100219	2011/05/09
Pre-Amplifier	A&R	150A220	23067	N/A
Probe Microphone	B&K	4182	2278070	2011/04/21
Signal Generator	R&S	SMT03	100170	2011/05/09

Electrical fast transient/burst / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2010/12/09

Surge / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2010/12/09

Conducted susceptibility / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Schaffner NSG 2070 RF-Generator	Schaffner	N/A	N/A	2011/04/07

Power frequency magnetic field / SR3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Induction Coil Interface	Schaffner	INA 2141	6002	N/A
Magnetic Loop Coil	Schaffner	INA 702	160	N/A

Voltage dips and interruption / SR6

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
TRANSIENT TEST SYSTEM	EMC PARTNER	TRA2000IN6	1138	2010/12/09

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Impedance Stabilization Network

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

Electrostatic Discharge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in ESD testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant ESD standards. The immunity test signal from the ESD system meet the required specifications in IEC 61000-4-2 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 3.0 % and 3.8%.

Radiated susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in RS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant RS standards. The immunity test signal from the RS system meet the required specifications in IEC 61000-4-3 through the calibration for the uniform field strength and monitoring for the test level with the uncertainty evaluation report for the electrical filed strength as being 3.57 dB.

Electrical fast transient/burst

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in EFT/Burst testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant EFT/Burst standards. The immunity test signal from the EFT/Burst system meet the required specifications in IEC 61000-4-4 through the calibration report with the calibrated uncertainty for the waveform of voltage, frequency and timing as being 4 %, and 2.5%.

Surge

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in Surge testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant Surge standards. The immunity test signal from the Surge system meet the required specifications in IEC 61000-4-5 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 3.5 % and 0.1%.

Conducted susceptibility

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in CS testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant CS standards. The immunity test signal from the CS system meet the required specifications in IEC 61000-4-6 through the calibration for unmodulated signal and monitoring for the test level with the uncertainty evaluation report for the injected modulated signal level through CDN and EM Clamp/Direct Injection as being 2.0 dB and 2.61 dB.

Power frequency magnetic field

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in PFM testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant PFM standards. The immunity test signal from the PFM system meet the required specifications in IEC 61000-4-8 through the calibration report with the calibrated uncertainty for the Gauss Meter to verify the output level of magnetic field strength as being 2.0 %.

Voltage dips and interruption

As what is concluded in the document from Note2 of clause 5.4.6.2 of ISO/IEC 17025, the requirements for measurement uncertainty in DIP testing are deemed to have been satisfied, and the testing is reported in accordance with the relevant DIP standards. The immunity test signal from the DIP system meet the required specifications in IEC 61000-4-11 through the calibration report with the calibrated uncertainty for the waveform of voltage and timing as being 3.5 % and 0.1%.

2.4. Test Environment

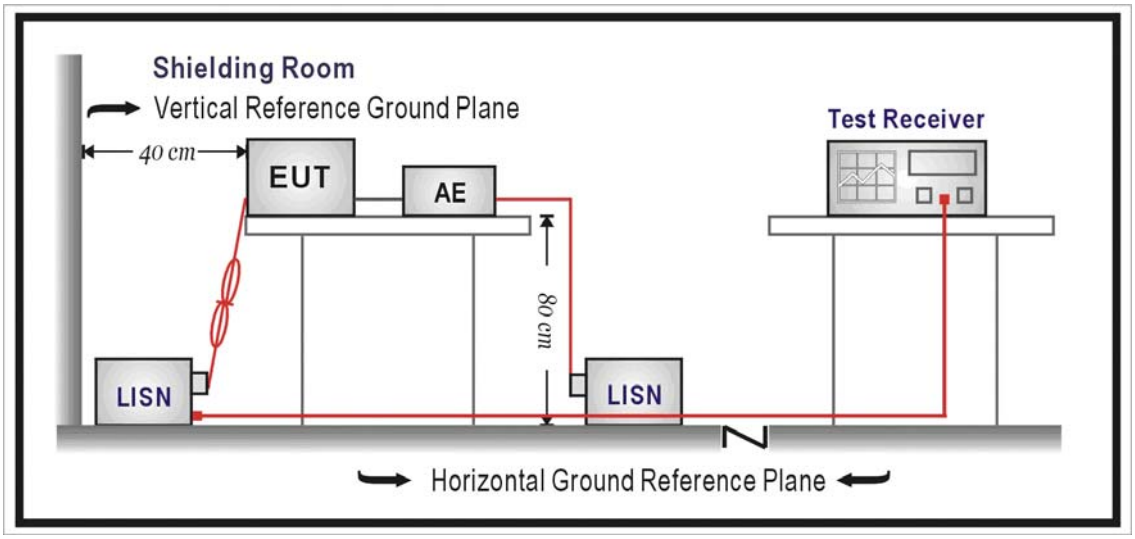
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Impedance Stabilization Network	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000
Electrostatic Discharge	Temperature (°C)	15-35	21
	Humidity (%RH)	30-60	51
	Barometric pressure (mbar)	860-1060	950-1000
Radiated susceptibility	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Electrical fast transient/burst	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Surge	Temperature (°C)	15-35	21
	Humidity (%RH)	10-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Conducted susceptibility	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Power frequency magnetic field	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000
Voltage dips and interruption	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission (Main Terminals)

3.1. Test Specification

According to EMC Standard : EN 55022

3.2. Test Setup



3.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 – 46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

3.4. Test Procedure

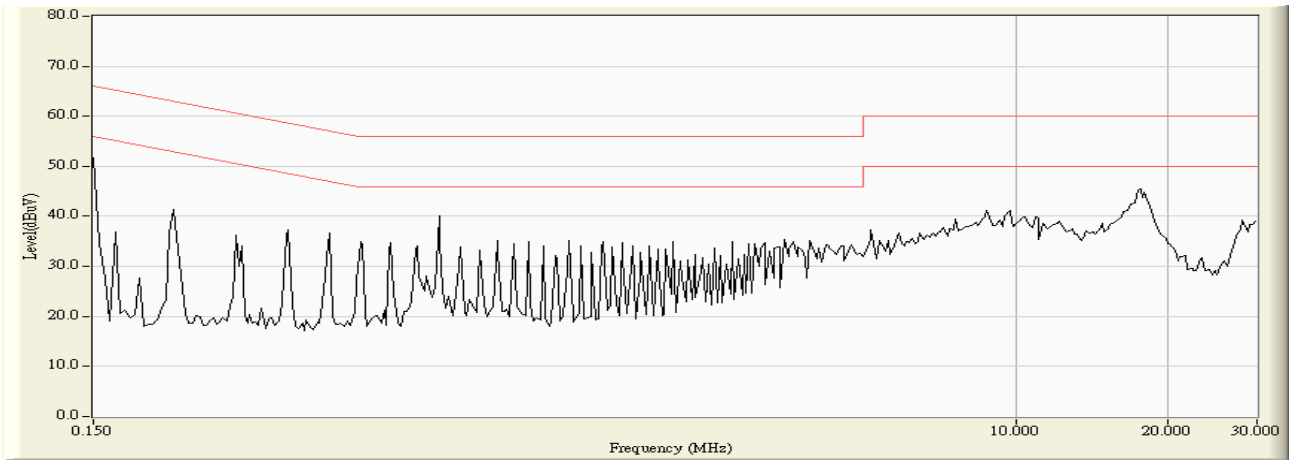
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.
(Please refers to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Deviation from Test Standard

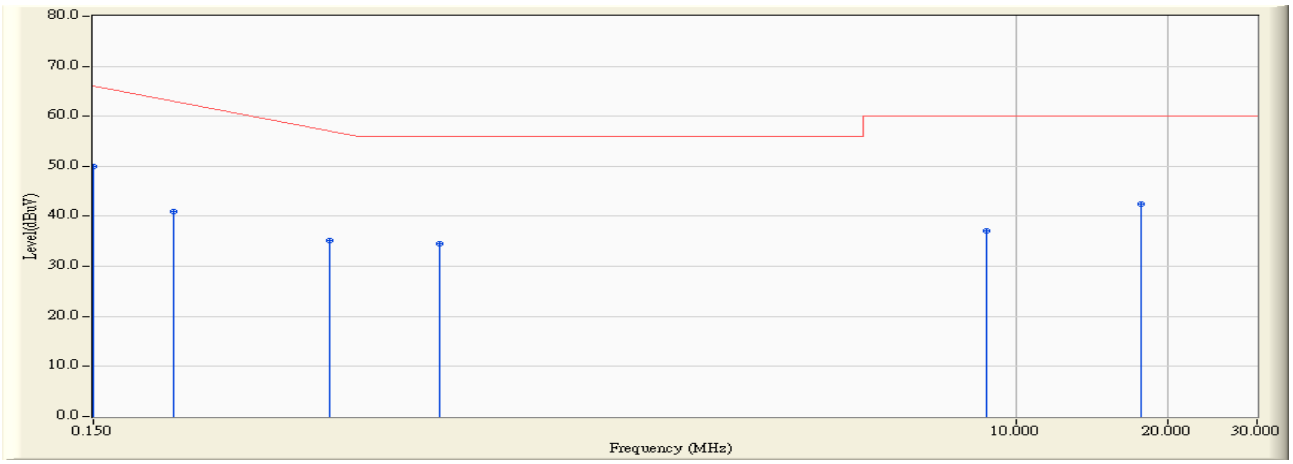
No deviation.

3.6. Test Result

Site : SR_1	**Time : 2011/07/26 - 23:14**
Limit : CISPR_B_00M_QP	**Margin : 10**
EUT : Personal Computer	**Probe : ENV_216_L1 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1**



Site : SR_1	**Time : 2011/07/26 - 23:15**
Limit : CISPR_B_00M_QP	**Margin : 0**
EUT : Personal Computer	**Probe : ENV_216_L1 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1**

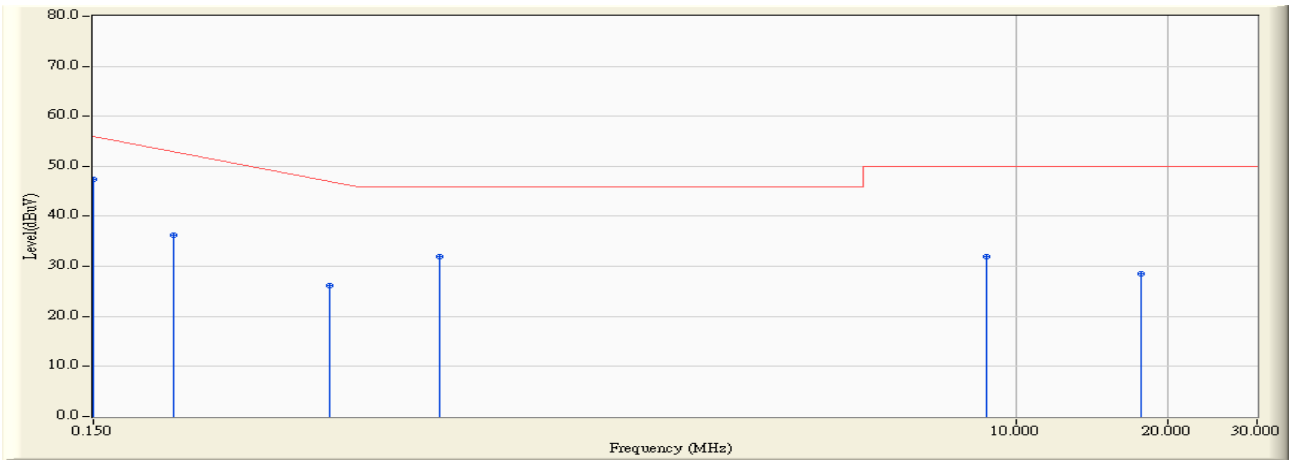


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	9.790	40.090	49.880	-16.120	66.000	QUASIPEAK
2		0.216	9.790	31.220	41.010	-23.104	64.114	QUASIPEAK
3		0.439	9.790	25.430	35.220	-22.523	57.743	QUASIPEAK
4		0.724	9.798	24.710	34.508	-21.492	56.000	QUASIPEAK
5		8.779	9.870	27.210	37.080	-22.920	60.000	QUASIPEAK
6		17.642	10.110	32.380	42.490	-17.510	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:15**
Limit : CISPR_B_00M_AV	**Margin : 0**
EUT : Personal Computer	**Probe : ENV_216_L1 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1**

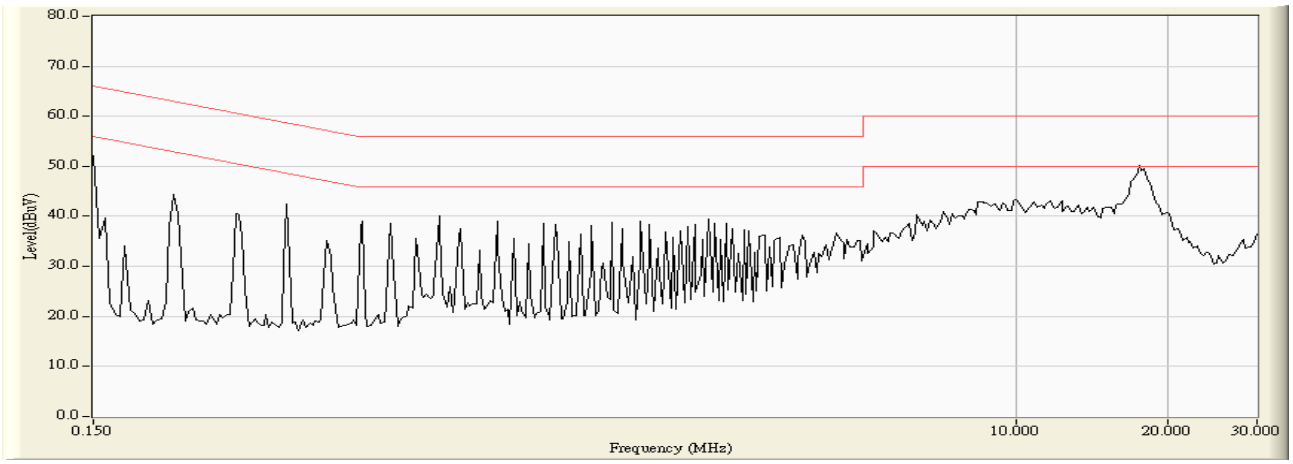


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	9.790	37.560	47.350	-8.650	56.000	AVERAGE
2		0.216	9.790	26.430	36.220	-17.894	54.114	AVERAGE
3		0.439	9.790	16.380	26.170	-21.573	47.743	AVERAGE
4		0.724	9.798	22.260	32.058	-13.942	46.000	AVERAGE
5		8.779	9.870	22.190	32.060	-17.940	50.000	AVERAGE
6		17.642	10.110	18.390	28.500	-21.500	50.000	AVERAGE

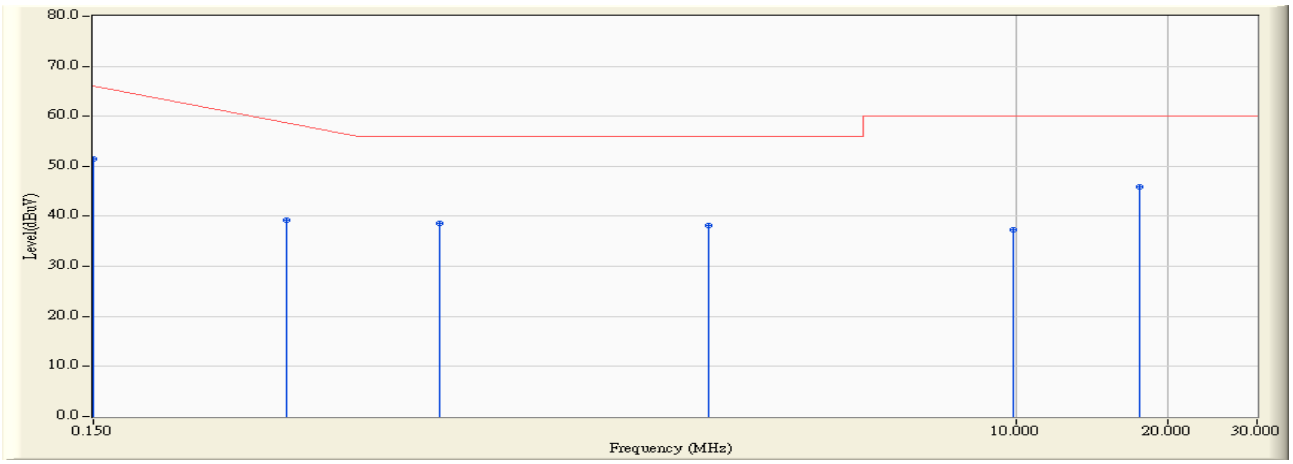
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:16**
Limit : CISPR_B_00M_QP	**Margin : 10**
EUT : Personal Computer	**Probe : ENV_216_N - Line2**
Power : AC 230V/50Hz	**Note : Mode 1**



Site : SR_1	**Time : 2011/07/26 - 23:17**
Limit : CISPR_B_00M_QP	**Margin : 0**
EUT : Personal Computer	**Probe : ENV_216_N - Line2**
Power : AC 230V/50Hz	**Note : Mode 1**

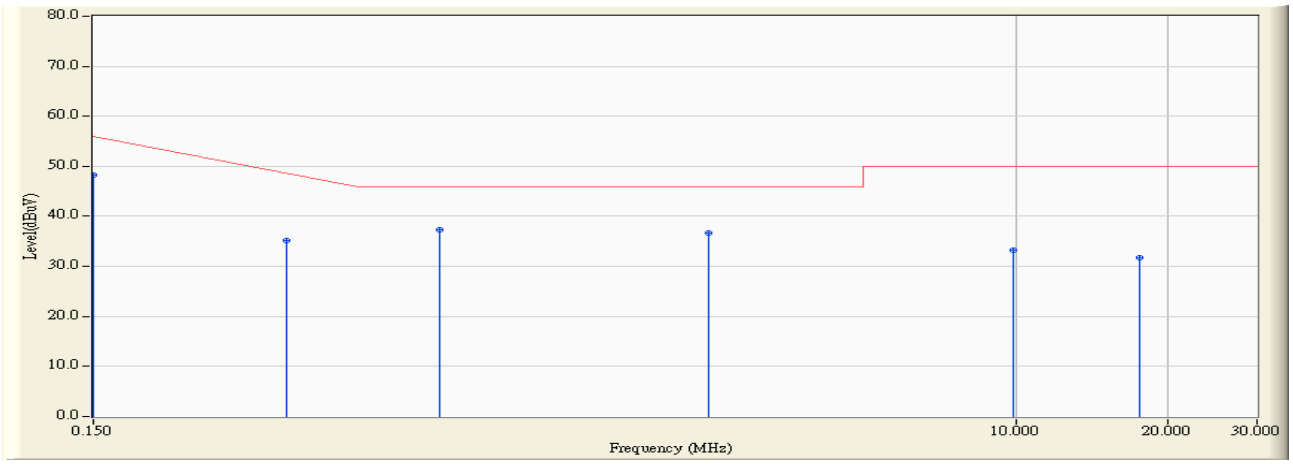


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.150	9.783	41.720	51.503	-14.497	66.000	QUASIPEAK
2		0.361	9.790	29.360	39.150	-20.821	59.971	QUASIPEAK
3		0.724	9.790	28.770	38.560	-17.440	56.000	QUASIPEAK
4		2.466	9.800	28.470	38.270	-17.730	56.000	QUASIPEAK
5		9.869	9.900	27.420	37.320	-22.680	60.000	QUASIPEAK
6	*	17.564	10.200	35.690	45.890	-14.110	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:17**
Limit : CISPR_B_00M_AV	**Margin : 0**
EUT : Personal Computer	**Probe : ENV_216_N - Line2**
Power : AC 230V/50Hz	**Note : Mode 1**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.150	9.783	38.370	48.153	-7.847	56.000	AVERAGE
2		0.361	9.790	25.390	35.180	-14.791	49.971	AVERAGE
3		0.724	9.790	27.570	37.360	-8.640	46.000	AVERAGE
4		2.466	9.800	26.830	36.630	-9.370	46.000	AVERAGE
5		9.869	9.900	23.450	33.350	-16.650	50.000	AVERAGE
6		17.564	10.200	21.450	31.650	-18.350	50.000	AVERAGE

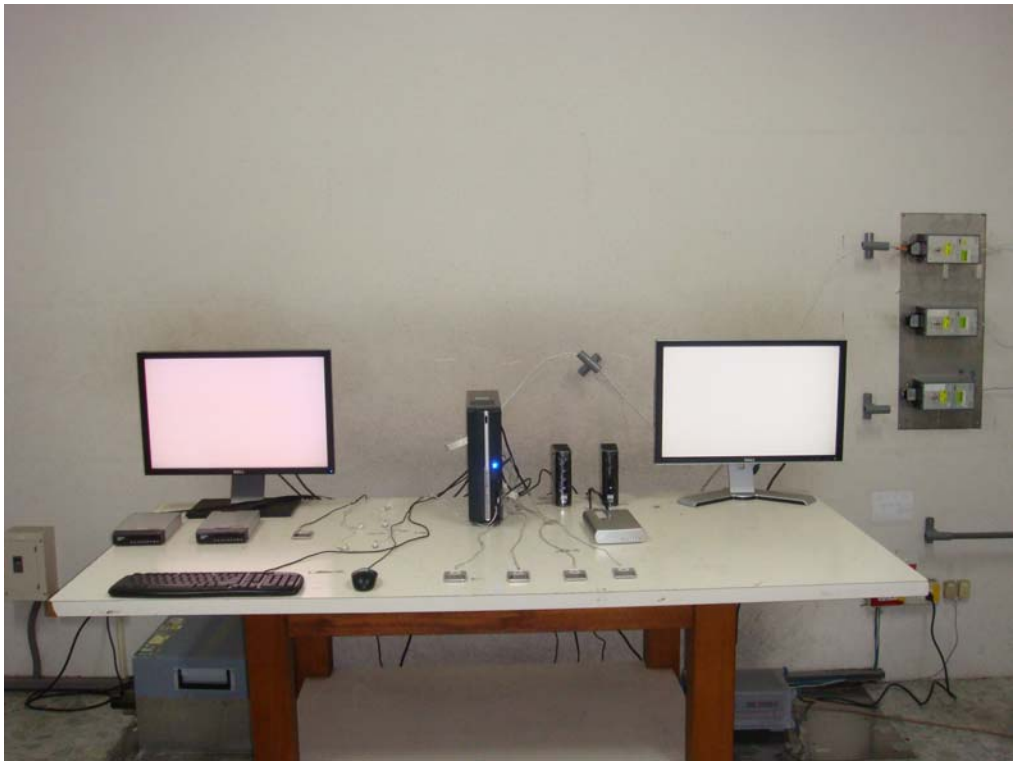
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3.7. Test Photograph

Test Mode : Mode 1

Description : Front View of Conducted Test



Test Mode : Mode 1

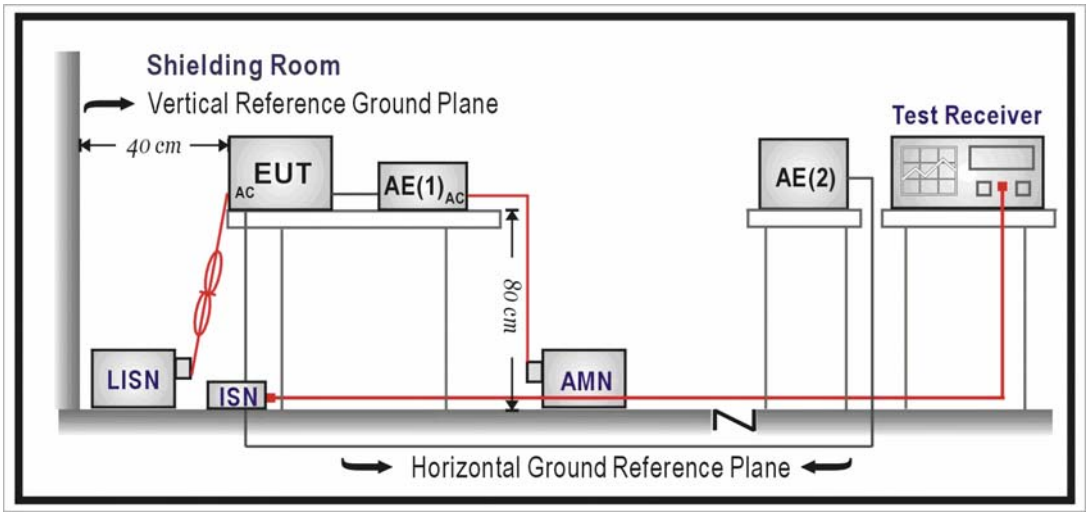
Description : Back View of Conducted Test

4. Conducted Emissions (Telecommunication Ports)

4.1. Test Specification

According to EMC Standard: EN 55022

4.2. Test Setup



4.3. Limit

Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	84 – 74	74 – 64
0.50 - 30	74	64

Remarks:

The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz.

4.4. Test Procedure

Telecommunication Port:

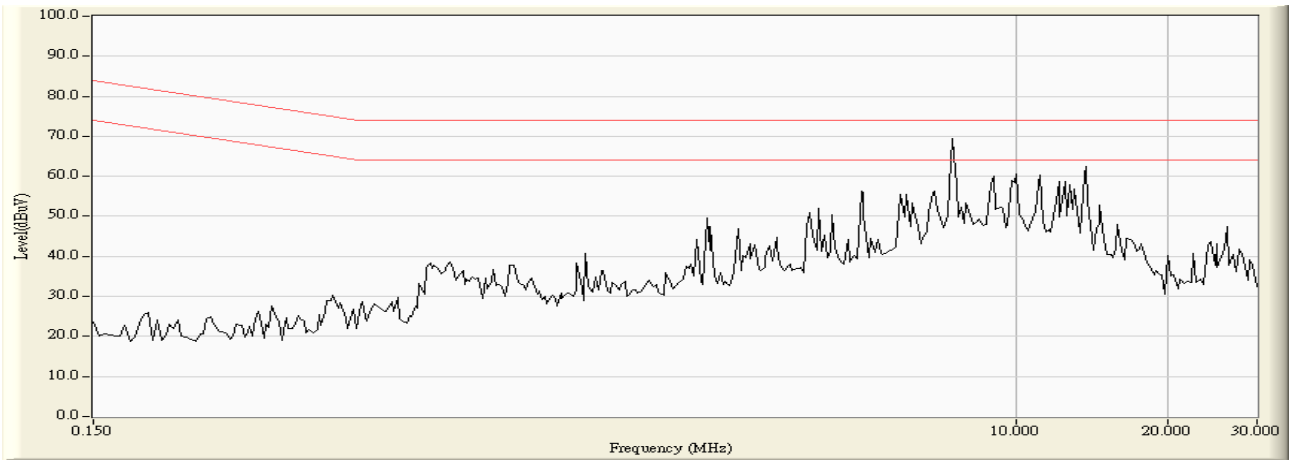
The mains voltage shall be supplied to the EUT via the LISN when the measurement of telecommunication port is performed. The common mode disturbances at the telecommunication port shall be connected to the ISN, which is 150 ohm impedance. Both alternative cables are tested related to the LCL requested. The measurement range is from 150kHz to 30MHz. The bandwidth of measurement is set to 9kHz.
The 75dB LCL ISN is used for cat. 6 cable, the 65dB LCL ISN is used for cat. 5 cable, 55dB LCL ISN is used for cat. 3.

4.5. Deviation from Test Standard

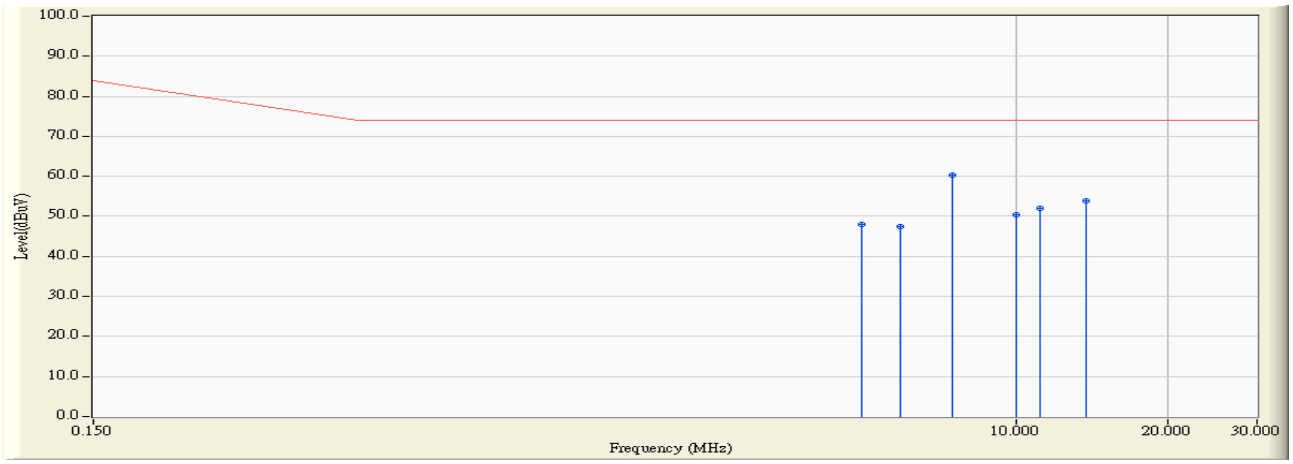
No deviation.

4.6. Test Result

Site : SR_1	**Time : 2011/07/26 - 23:24**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 10MB**



Site : SR_1	**Time : 2011/07/26 - 23:25**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 10MB**

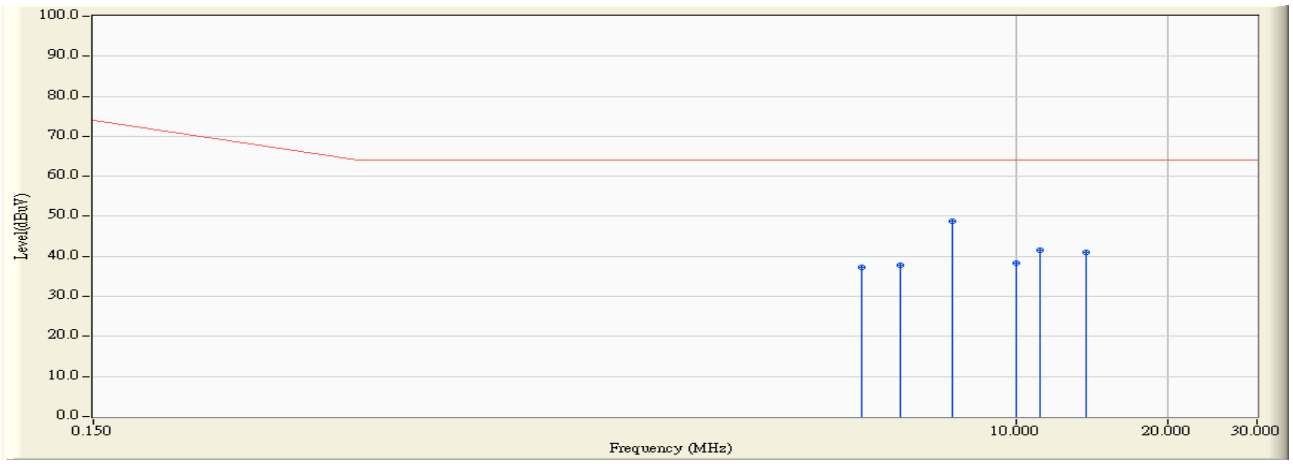


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		4.947	9.980	37.900	47.880	-26.120	74.000	QUASIPEAK
2		5.923	9.980	37.500	47.480	-26.520	74.000	QUASIPEAK
3	*	7.502	9.970	50.340	60.310	-13.690	74.000	QUASIPEAK
4		9.994	9.960	40.540	50.500	-23.500	74.000	QUASIPEAK
5		11.197	9.964	42.160	52.124	-21.876	74.000	QUASIPEAK
6		13.752	10.143	43.640	53.783	-20.217	74.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:25**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 10MB**

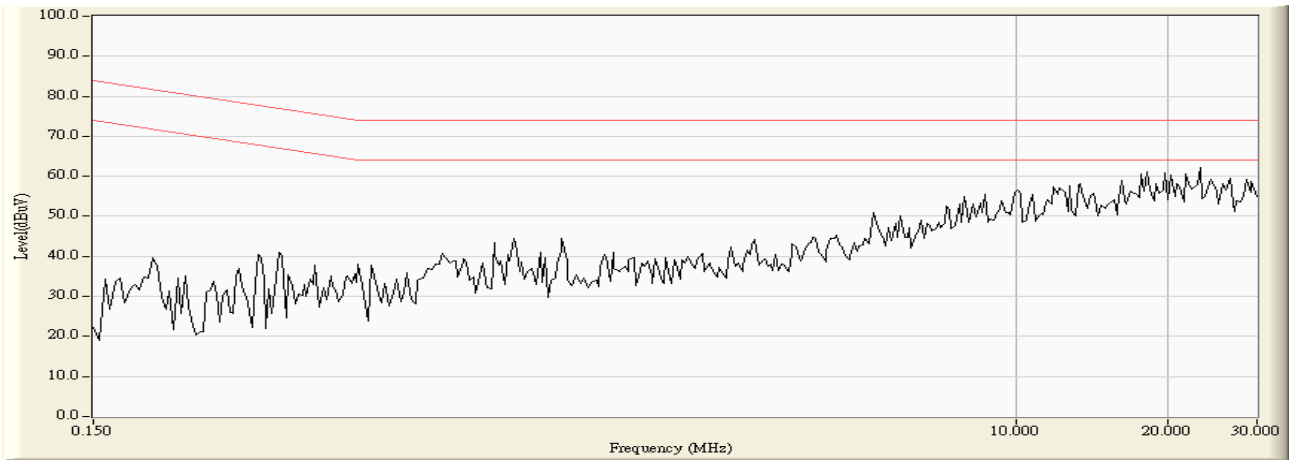


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		4.947	9.980	27.270	37.250	-26.750	64.000	AVERAGE
2		5.923	9.980	27.720	37.700	-26.300	64.000	AVERAGE
3	*	7.502	9.970	38.720	48.690	-15.310	64.000	AVERAGE
4		9.994	9.960	28.430	38.390	-25.610	64.000	AVERAGE
5		11.197	9.964	31.620	41.584	-22.416	64.000	AVERAGE
6		13.752	10.143	30.950	41.093	-22.907	64.000	AVERAGE

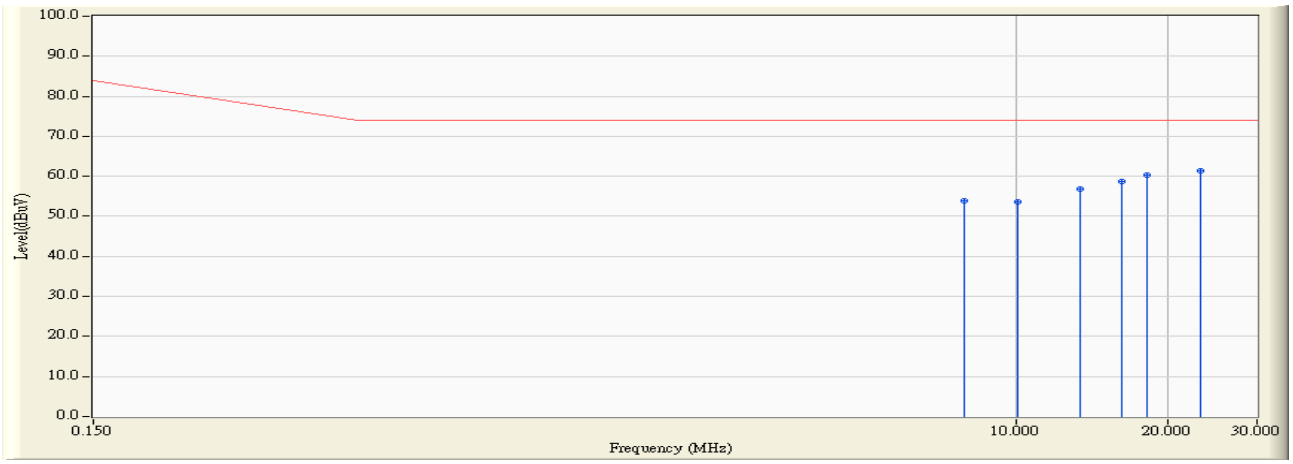
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:21**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 100MB**



Site : SR_1	**Time : 2011/07/26 - 23:22**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 100MB**

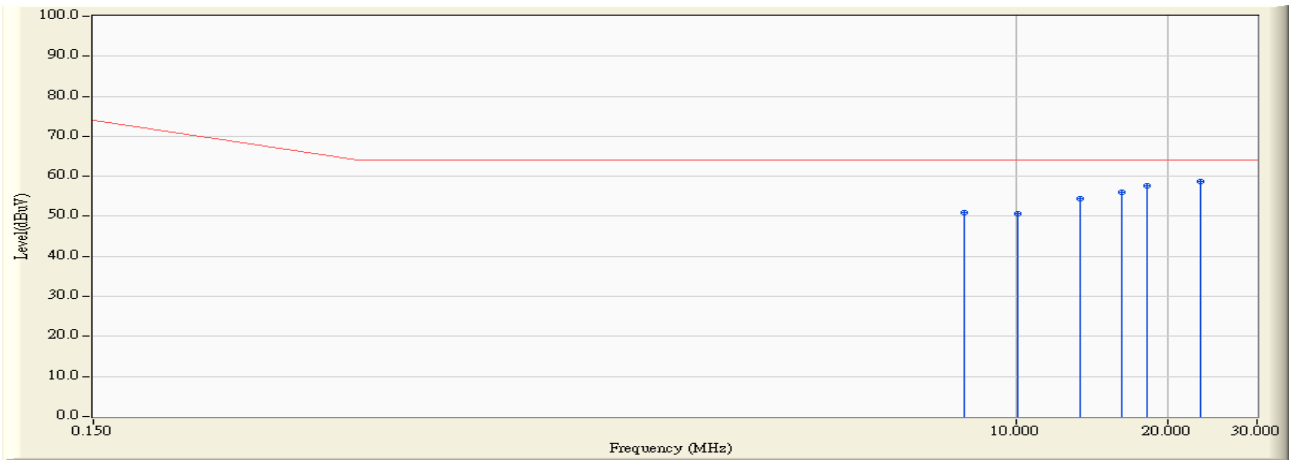


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		7.923	9.970	43.960	53.930	-20.070	74.000	QUASIPEAK
2		10.060	9.960	43.680	53.640	-20.360	74.000	QUASIPEAK
3		13.420	10.150	46.780	56.930	-17.070	74.000	QUASIPEAK
4		16.228	10.130	48.540	58.670	-15.330	74.000	QUASIPEAK
5		18.244	10.120	50.240	60.360	-13.640	74.000	QUASIPEAK
6	*	23.127	10.100	51.210	61.310	-12.690	74.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:22**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T4 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 100MB**

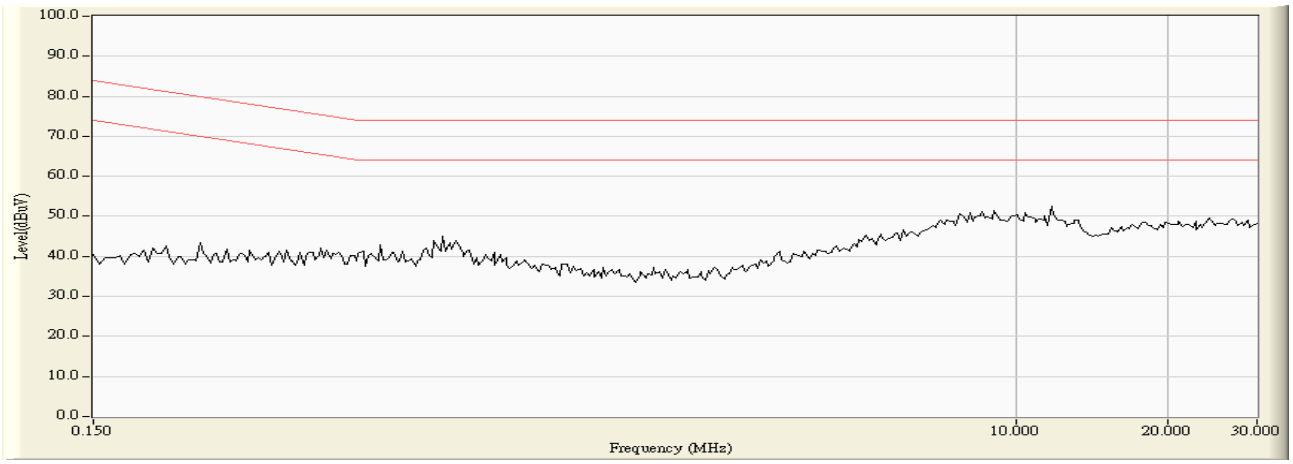


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		7.923	9.970	41.000	50.970	-13.030	64.000	AVERAGE
2		10.060	9.960	40.720	50.680	-13.320	64.000	AVERAGE
3		13.420	10.150	44.390	54.540	-9.460	64.000	AVERAGE
4		16.228	10.130	45.880	56.010	-7.990	64.000	AVERAGE
5		18.244	10.120	47.540	57.660	-6.340	64.000	AVERAGE
6	*	23.127	10.100	48.500	58.600	-5.400	64.000	AVERAGE

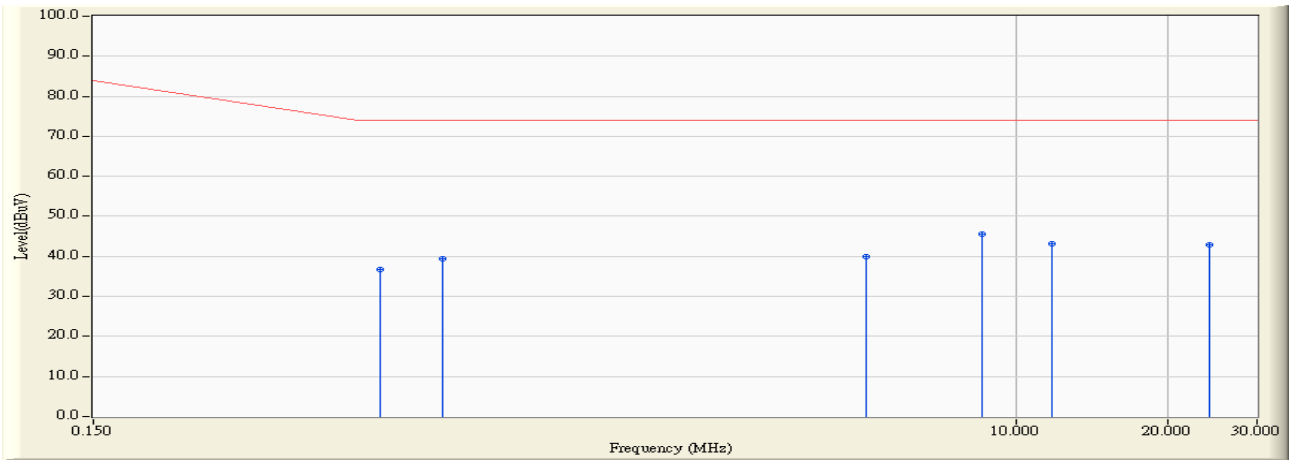
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:18**
Limit : ISN_Voltage_B_00M_QP	**Margin : 10**
EUT : Personal Computer	**Probe : ISN_T8 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 1G**



Site : SR_1	**Time : 2011/07/26 - 23:20**
Limit : ISN_Voltage_B_00M_QP	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T8 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 1G**

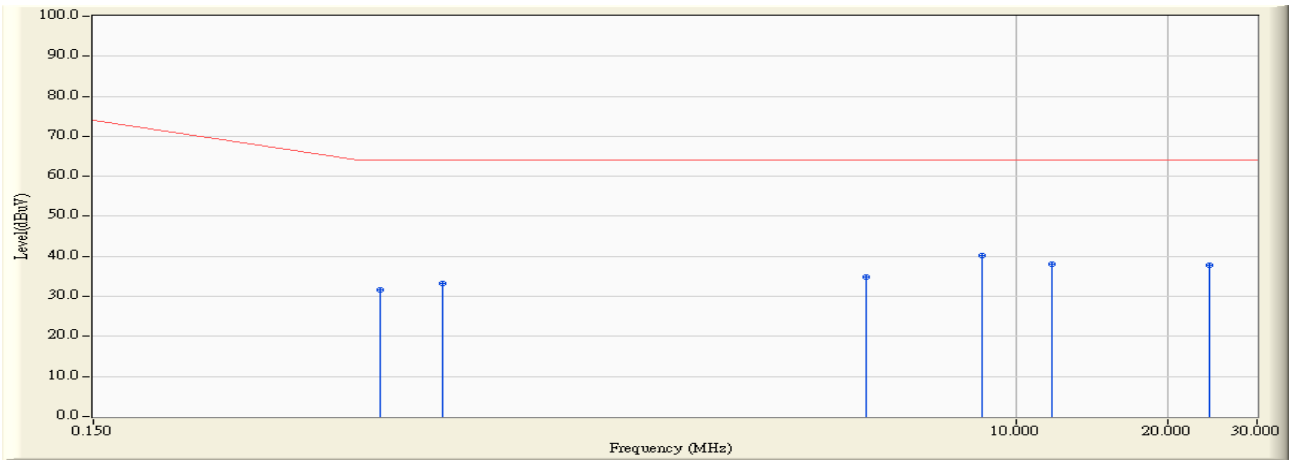


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.552	10.155	26.690	36.845	-37.155	74.000	QUASIPEAK
2		0.736	10.140	29.330	39.470	-34.530	74.000	QUASIPEAK
3		5.068	10.050	29.810	39.860	-34.140	74.000	QUASIPEAK
4	*	8.552	10.060	35.610	45.670	-28.330	74.000	QUASIPEAK
5		11.806	10.140	33.110	43.250	-30.750	74.000	QUASIPEAK
6		24.162	10.200	32.700	42.900	-31.100	74.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : SR_1	**Time : 2011/07/26 - 23:20**
Limit : ISN_Voltage_B_00M_AV	**Margin : 0**
EUT : Personal Computer	**Probe : ISN_T8 - Line1**
Power : AC 230V/50Hz	**Note : Mode 1, ISN 1G**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.552	10.155	21.390	31.545	-32.455	64.000	AVERAGE
2		0.736	10.140	23.100	33.240	-30.760	64.000	AVERAGE
3		5.068	10.050	24.770	34.820	-29.180	64.000	AVERAGE
4	*	8.552	10.060	30.120	40.180	-23.820	64.000	AVERAGE
5		11.806	10.140	27.910	38.050	-25.950	64.000	AVERAGE
6		24.162	10.200	27.490	37.690	-26.310	64.000	AVERAGE

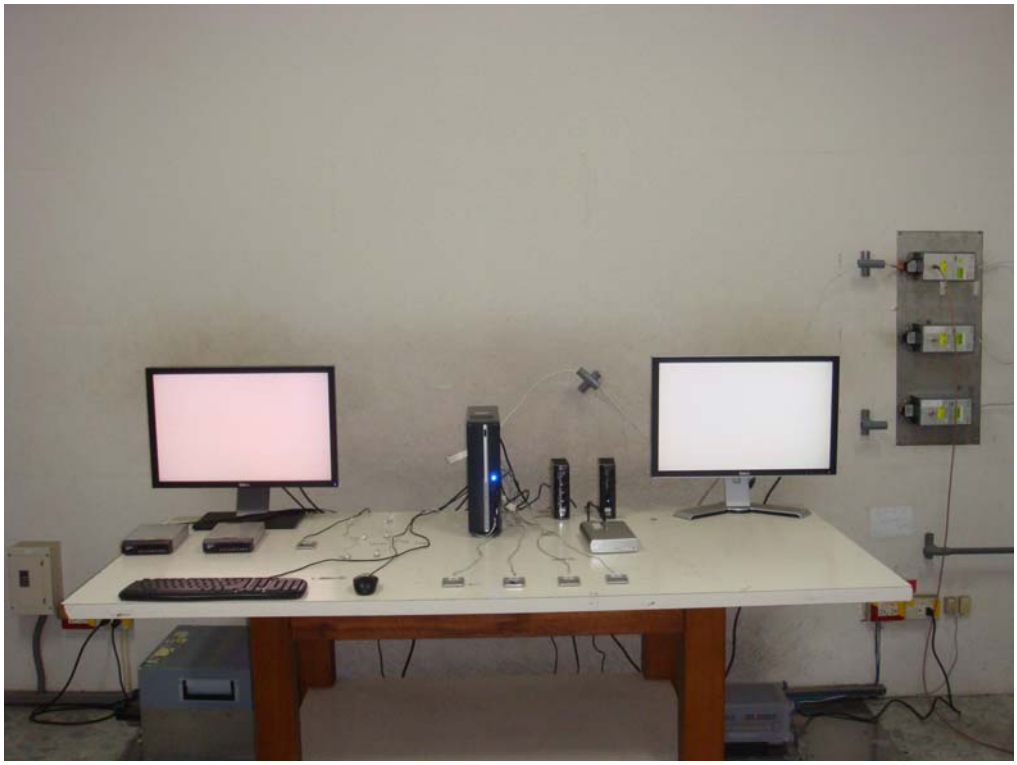
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

4.7. Test Photograph

Test Mode : Mode 1

Description : Front View of ISN Test



Test Mode : Mode 1

Description : Back View of ISN Test

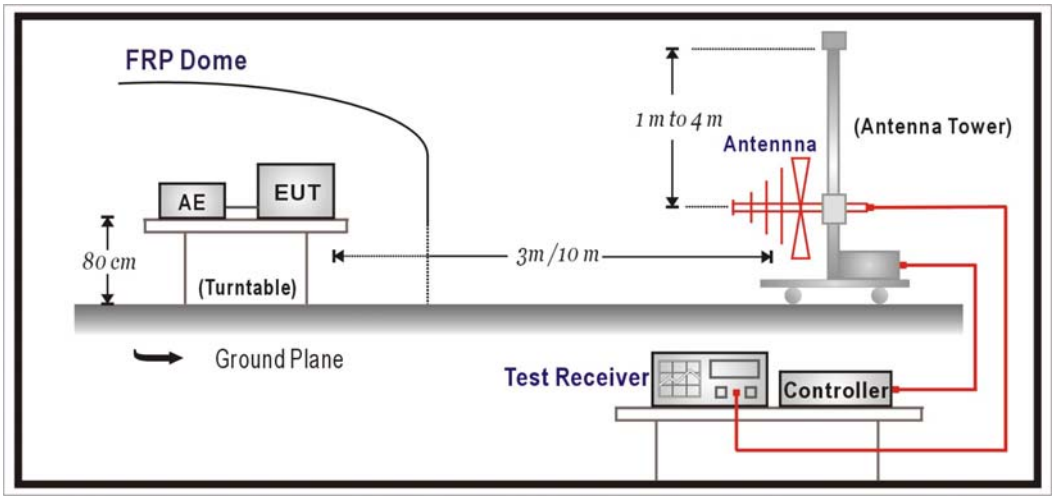
5. Radiated Emission

5.1. Test Specification

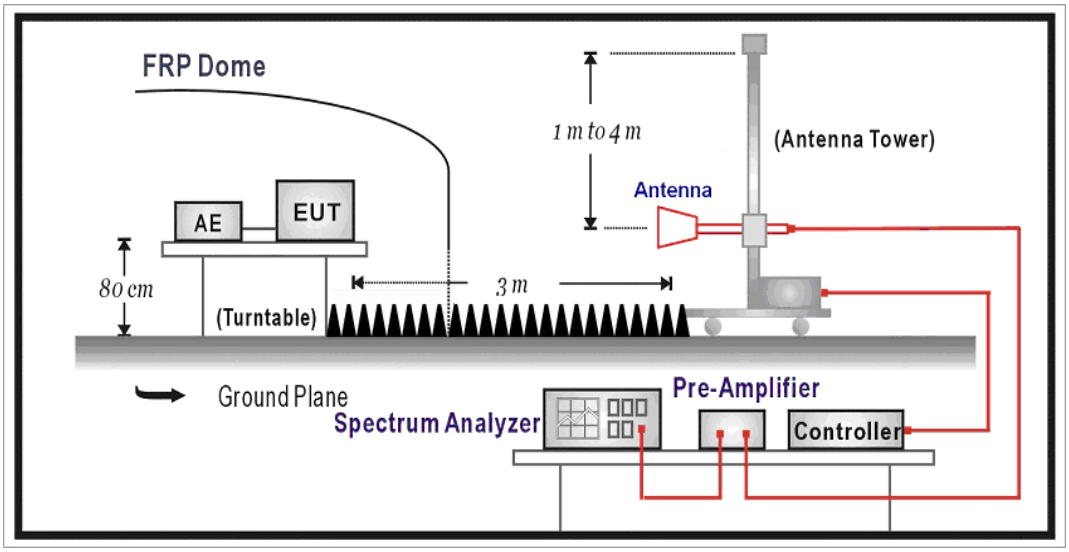
According to EMC Standard : EN 55022

5.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



5.3. Limit

Limits		
Frequency (MHz)	Distance (m)	dBuV/m
30 – 230	10	30
230 – 1000	10	37

Limits			
Frequency (GHz)	Distance (m)	Peak (dBuV/m)	Average (dBuV/m)
1 – 3	3	70	50
3 – 6	3	74	54

Remark:

1. The tighter limit shall apply at the edge between two frequency bands.
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5^{th} harmonic of the highest frequency or 6 GHz, whichever is lower

5.4. Test Procedure

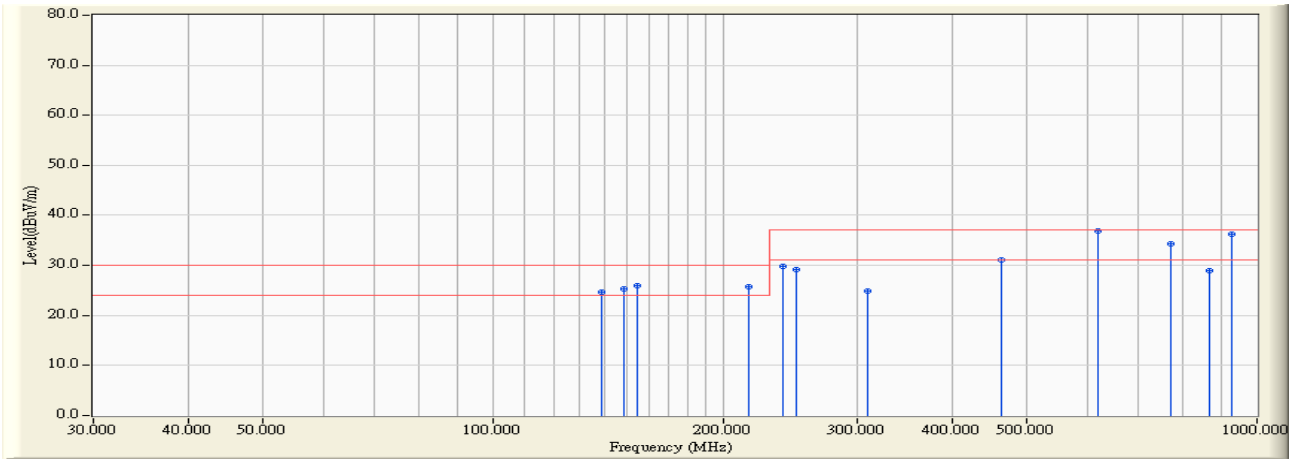
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3/10 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.
Radiated emissions were invested over the frequency range from 30MHz to1GHz using a receiver bandwidth of 120kHz and above 1GHz using a receiver bandwidth of 1MHz.
30MHz to1GHz Radiated was performed at an antenna to EUT distance of 10 meters.
Above1GHz Radiated was performed at an antenna to EUT distance of 3 meters.
It is placed with absorb on the ground between EUT and Antenna.

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Site : OATS-1	**Time : 2011/07/28 - 03:48**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Personal Computer	**Probe : Site1_CBL6112_10M_0811 - HORIZONTAL**
Power : AC 230V/50Hz	**Note : Mode 1**

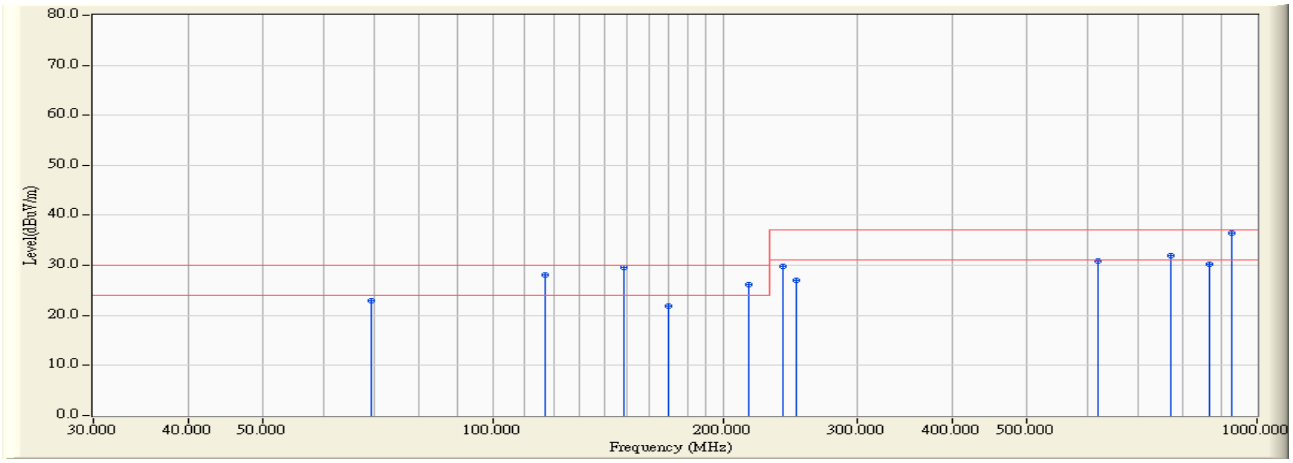


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		139.050	12.875	11.858	24.733	-5.267	30.000	QUASIPEAK
2		148.420	12.123	13.250	25.373	-4.627	30.000	QUASIPEAK
3		154.500	11.692	14.223	25.915	-4.085	30.000	QUASIPEAK
4		216.000	10.572	15.241	25.813	-4.187	30.000	QUASIPEAK
5		240.000	13.300	16.610	29.910	-7.090	37.000	QUASIPEAK
6		250.000	14.388	14.760	29.148	-7.852	37.000	QUASIPEAK
7		309.990	16.098	8.721	24.819	-12.181	37.000	QUASIPEAK
8		463.490	20.282	10.887	31.169	-5.831	37.000	QUASIPEAK
9	*	617.990	22.739	14.231	36.970	-0.030	37.000	QUASIPEAK
10		772.500	24.400	9.965	34.365	-2.635	37.000	QUASIPEAK
11		865.180	25.151	3.829	28.980	-8.020	37.000	QUASIPEAK
12		926.980	25.626	10.638	36.264	-0.736	37.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : OATS-1	**Time : 2011/07/28 - 03:45**
Limit : CISPR_B_10M_QP	**Margin : 6**
EUT : Personal Computer	**Probe : Site1_CBL6112_10M_0811 - VERTICAL**
Power : AC 230V/50Hz	**Note : Mode 1**

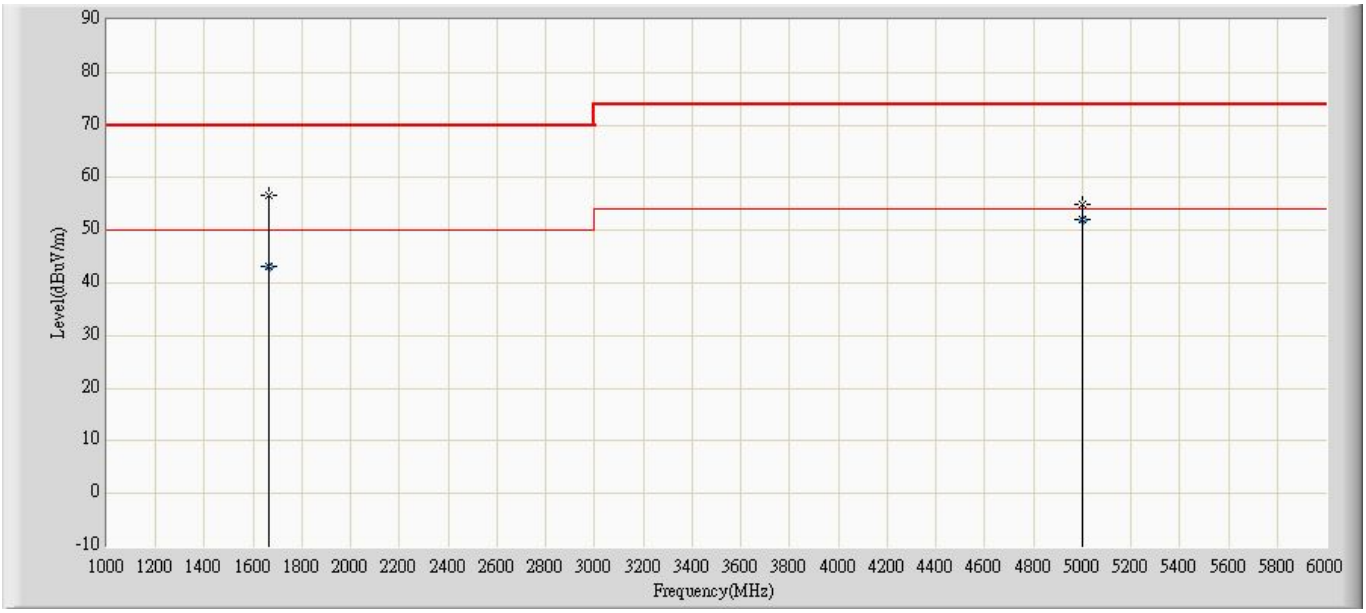


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		69.240	6.729	16.313	23.042	-6.958	30.000	QUASIPEAK
2		117.080	13.180	15.003	28.183	-1.817	30.000	QUASIPEAK
3	*	148.600	12.110	17.549	29.659	-0.341	30.000	QUASIPEAK
4		169.940	11.204	10.748	21.952	-8.048	30.000	QUASIPEAK
5		216.000	10.572	15.541	26.113	-3.887	30.000	QUASIPEAK
6		240.000	13.300	16.510	29.810	-7.190	37.000	QUASIPEAK
7		250.000	14.388	12.660	27.048	-9.952	37.000	QUASIPEAK
8		617.990	22.739	8.231	30.970	-6.030	37.000	QUASIPEAK
9		772.500	24.400	7.565	31.965	-5.035	37.000	QUASIPEAK
10		865.180	25.151	5.029	30.180	-6.820	37.000	QUASIPEAK
11		926.980	25.626	10.938	36.564	-0.436	37.000	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site: CB7 (9x6x6_Chamber)	**Time: 2011/07/26 - 17:42**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: 9120D_1-18G_Horn	**Polarity: Horizontal**
EUT : Personal Computer	**Power : AC 230V/50Hz**
Note : Mode 1	

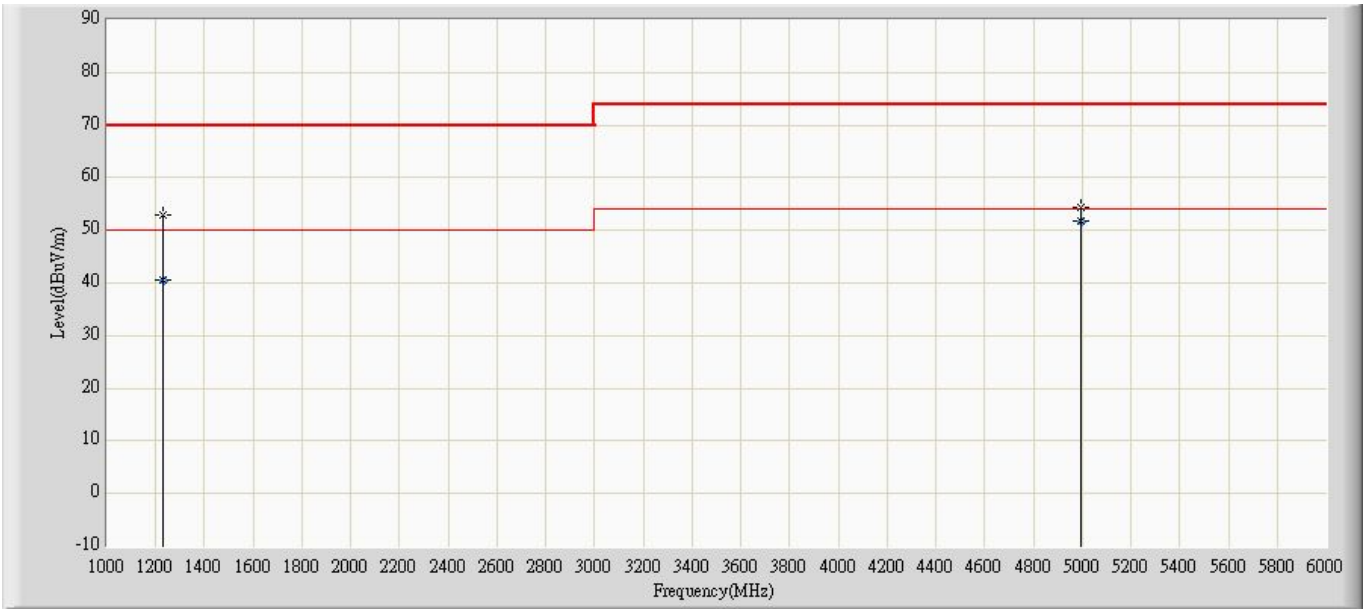


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1661.000	56.659	63.230	-13.341	70.000	-6.571	PK
2			1661.000	43.249	49.820	-6.751	50.000	-6.571	AV
3			5000.000	54.862	52.560	-19.138	74.000	2.302	PK
4		*	5000.000	52.032	49.730	-1.968	54.000	2.302	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Site: CB7 (9x6x6_Chamber)	**Time: 2011/07/26 - 17:56**
Limit: EN55022_B_(Above_1G)	**Margin: 0**
Probe: 9120D_1-18G_Horn	**Polarity: Vertical**
EUT : Personal Computer	**Power : AC 230V/50Hz**
Note : Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			1230.000	53.003	60.610	-16.997	70.000	-7.607	PK
2			1230.000	40.593	48.200	-9.407	50.000	-7.607	AV
3			4997.000	54.302	52.020	-19.698	74.000	2.282	PK
4		*	4997.000	51.732	49.450	-2.268	54.000	2.282	AV

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

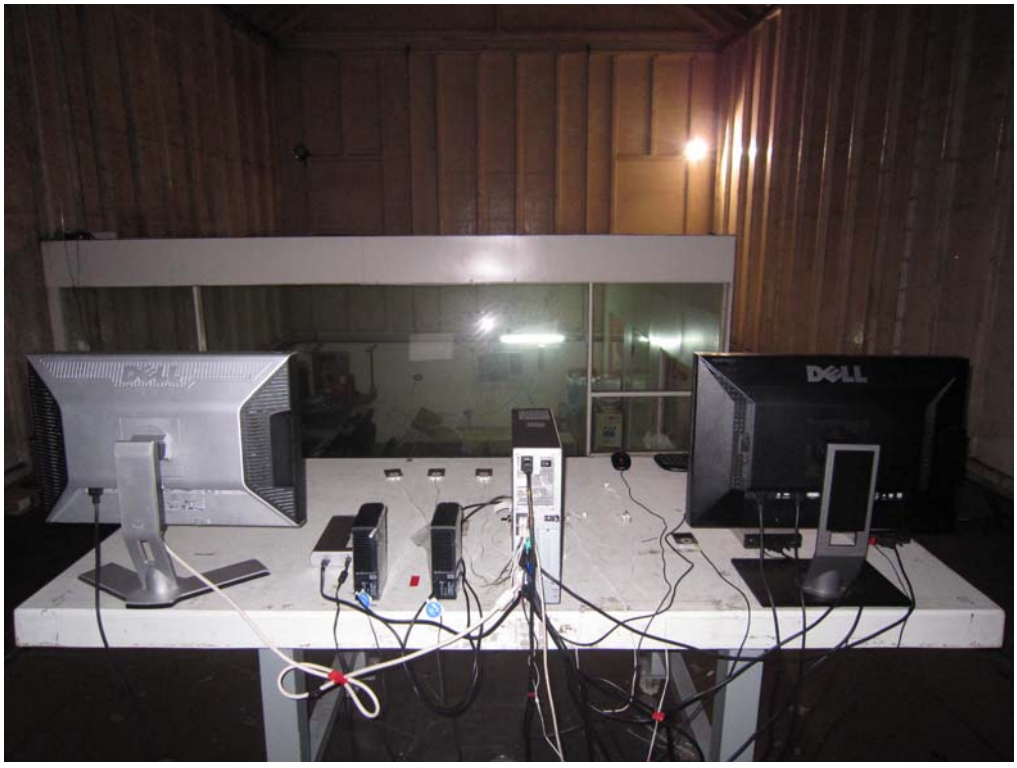
5.7. Test Photograph

Test Mode : Mode 1

Description : Front View of Radiated Test

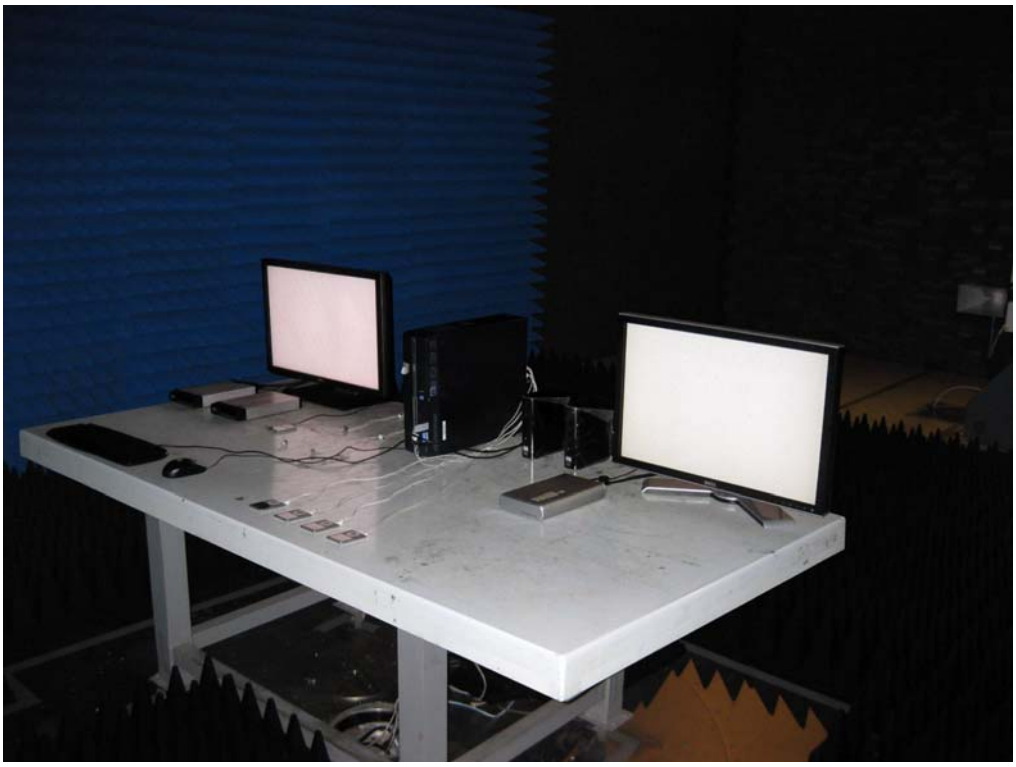
Test Mode : Mode 1

Description : Back View of Radiated Test



Test Mode : Mode 1

Description : Front View of High Frequency Radiated Test

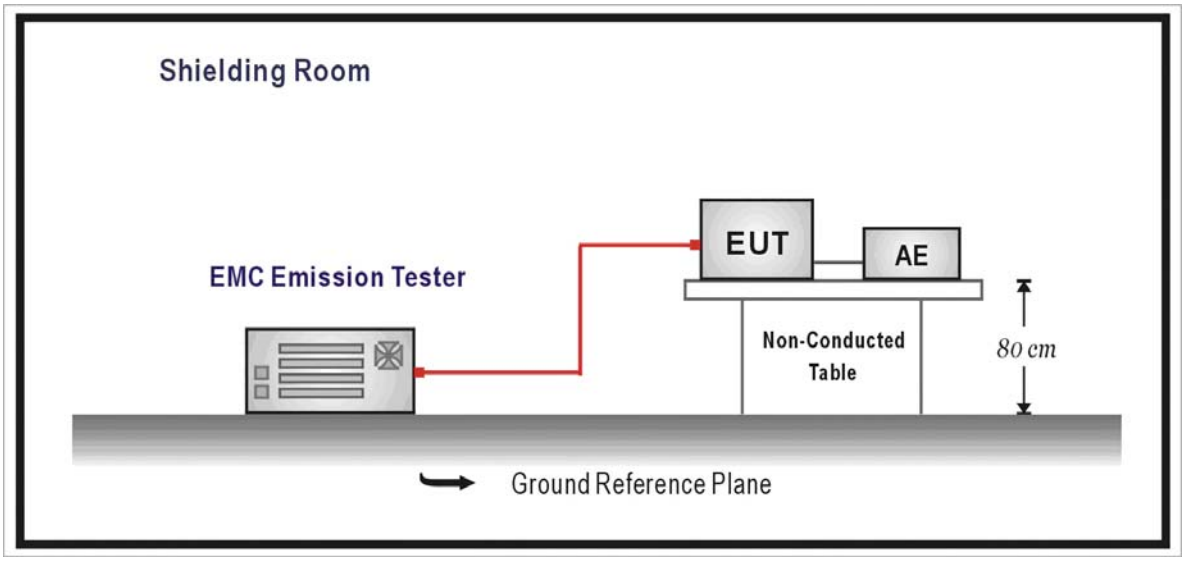


6. Harmonic Current Emission

6.1. Test Specification

According to EMC Standard : EN 61000-3-2

6.2. Test Setup



6.3. Limit

(a) Limits of Class A Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current A	Harmonics Order n	Maximum Permissible harmonic current A
Odd harmonics		Even harmonics	
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	8 ≤ n ≤ 40	0.23 * 8/n
11	0.33		
13	0.21		
15 ≤ n ≤ 39	0.15 * 15/n		

(b) Limits of Class B Harmonics Currents

For Class B equipment, the harmonic of the input current shall not exceed the maximum permissible values given in table that is the limit of Class A multiplied by a factor of 1.5.

(c) Limits of Class C Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current Expressed as a percentage of the input current at the fundamental frequency %
2	2
3	30 · λ*
5	10
7	7
9	5
11 ≤ n ≤ 39 (odd harmonics only)	3
∗λ is the circuit power factor	

(d) Limits of Class D Harmonics Currents

Harmonics Order n	Maximum Permissible harmonic current per watt mA/W	Maximum Permissible harmonic current A
3	3.4	2.30
5	1.9	1.14
7	1.0	0.77
9	0.5	0.40
11	0.35	0.33
11 ≤ n ≤ 39 (odd harmonics only)	3.85/n	See limit of Class A

6.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

6.5. Deviation from Test Standard

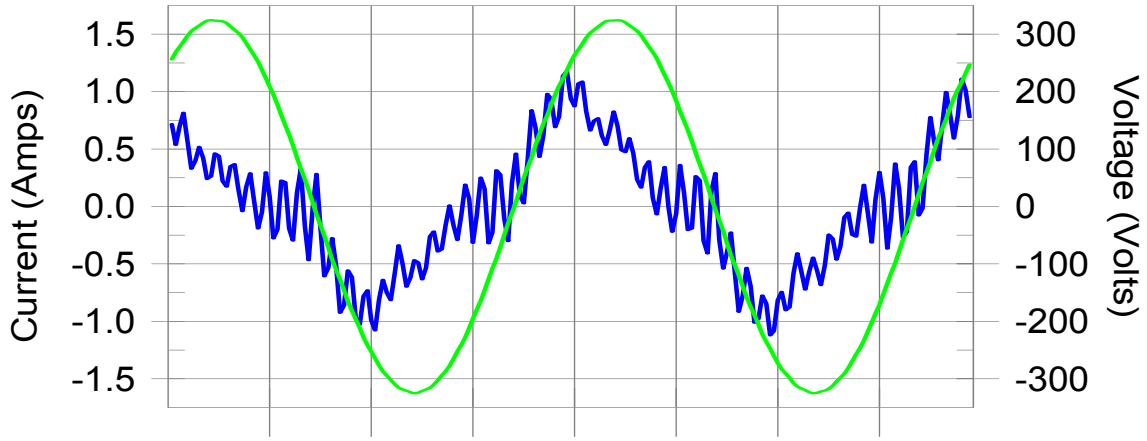
No deviation.

6.6. Test Result

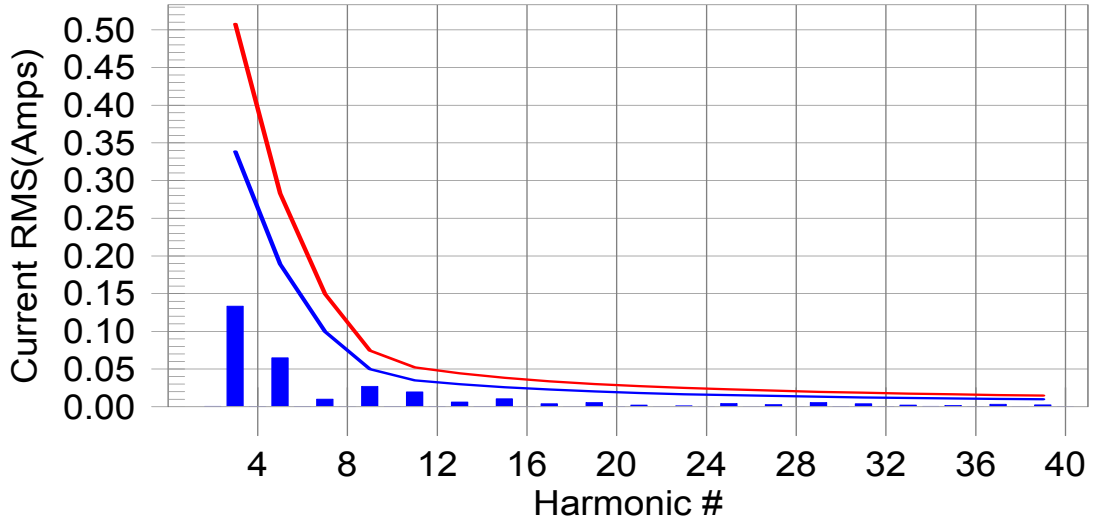
Product	Personal Computer		
Test Item	Power Harmonics		
Test Mode	Mode 1		
Date of Test	2011/08/02	Test Site	No.3 Shielded Room

Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class D limit line European Limits



Test result: Pass Worst harmonic was #11 with 62.28% of the limit.

Test Result: Pass Source qualification: Normal
THC(A): 0.15 I-THD(%): 31.47 POHC(A): 0.010 POHC Limit(A): 0.043
Highest parameter values during test:

V_RMS (Volts):	229.61	Frequency(Hz):	50.00
I_Peak (Amps):	1.262	I_RMS (Amps):	0.562
I_Fund (Amps):	0.499	Crest Factor:	2.416
Power (Watts):	99.6	Power Factor:	0.772

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001						
3	0.132	0.339	39.0	0.133	0.508	26.28	Pass
4	0.000						
5	0.064	0.189	33.8	0.065	0.283	23.46	Pass
6	0.000						
7	0.009	0.100	9.1	0.010	0.149	6.81	Pass
8	0.000						
9	0.028	0.050	56.2	0.027	0.074	38.78	Pass
10	0.000						
11	0.021	0.035	61.1	0.020	0.052	42.23	Pass
12	0.000						
13	0.006	0.030	19.1	0.006	0.044	14.52	Pass
14	0.000						
15	0.011	0.026	43.6	0.010	0.038	31.09	Pass
16	0.000						
17	0.005	0.023	20.6	0.004	0.034	16.02	Pass
18	0.000						
19	0.005	0.020	26.9	0.006	0.030	21.87	Pass
20	0.000						
21	0.003	0.018	16.0	0.002	0.027	17.44	Pass
22	0.000						
23	0.001	0.017	8.9	0.001	0.025	9.63	Pass
24	0.000						
25	0.005	0.015	32.4	0.005	0.023	23.77	Pass
26	0.000						
27	0.002	0.014	14.9	0.003	0.021	13.26	Pass
28	0.000						
29	0.006	0.013	47.8	0.006	0.020	35.49	Pass
30	0.000						
31	0.003	0.012	25.9	0.004	0.019	21.94	Pass
32	0.000						
33	0.002	0.012	16.7	0.002	0.017	18.83	Pass
34	0.000						
35	0.002	0.011	16.1	0.002	0.016	15.33	Pass
36	0.000						
37	0.003	0.010	26.4	0.003	0.015	20.90	Pass
38	0.000						
39	0.002	0.010	19.6	0.003	0.015	17.02	Pass
40	0.000						

1.Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.

2:According to EN61000-3-2 paragraph 7 the note 1 and 2 are valid for all applications having an active input power >75W. Others the result should be pass.

6.7. Test Photograph

Test Mode : Mode 1

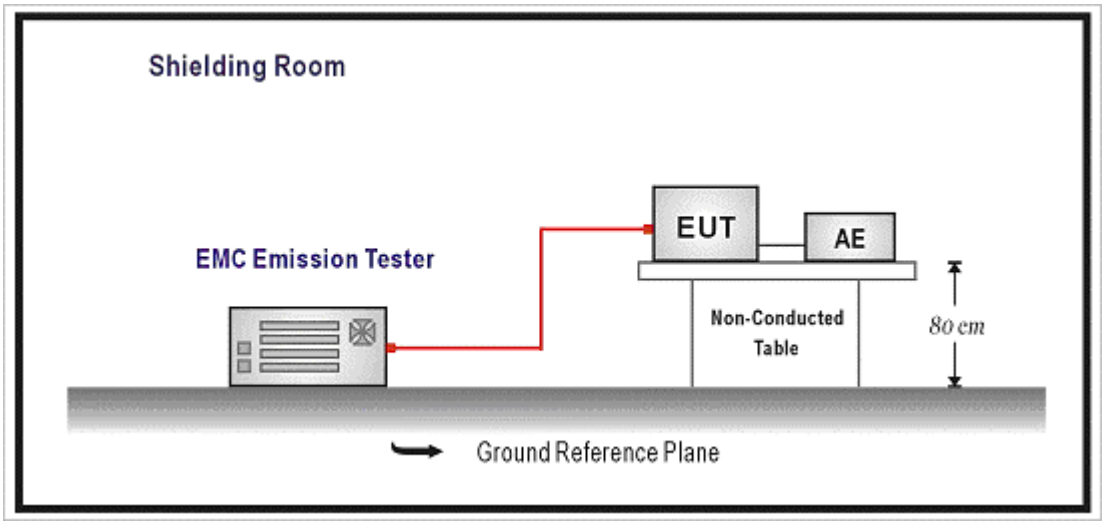
Description : Power Harmonics Test Setup

7. Voltage Fluctuation and Flicker

7.1. Test Specification

According to EMC Standard : EN 61000-3-3

7.2. Test Setup



7.3. Limit

The following limits apply:

- the value of P_{st} shall not be greater than 1.0;
- the value of P_{lt} shall not be greater than 0.65;
- the value of d(t) during a voltage change shall not exceed 3.3 % for more than 500 ms;
- the relative steady-state voltage change, d_c, shall not exceed 3.3 %;
- the maximum relative voltage change, d_{max}, shall not exceed;

a) 4 % without additional conditions;

b) 6 % for equipment which is:

- switched manually, or
- switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

NOTE The cycling frequency will be further limited by the P_{st} and P_{1t} limit.

For example: a d_{max} of 6%producing a rectangular voltage change characteristic twice per hour will give a P_{1t} of about 0.65.

c) 7 % for equipment which is:
- attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
- switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

P_{st} and P_{1t} requirements shall not be applied to voltage changes caused by manual switching.

7.4. Test Procedure

The EUT is supplied in series with power analyzer from a power source having the same normal voltage and frequency as the rated supply voltage and the equipment under test. And the rated voltage at the supply voltage of EUT of 0.94 times and 1.06 times shall be performed.

7.5. Deviation from Test Standard

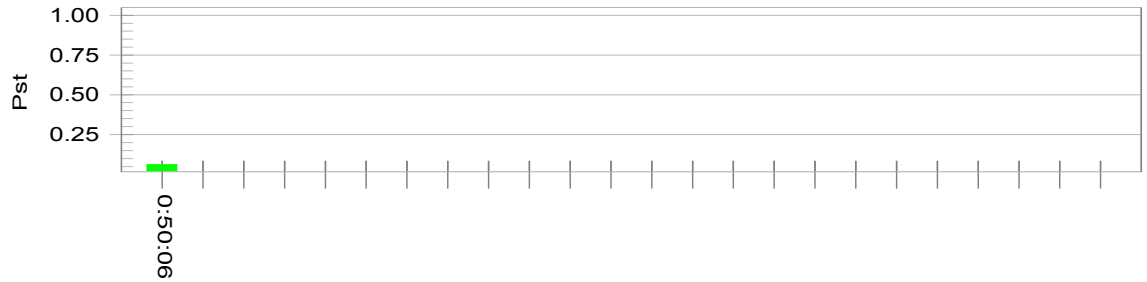
No deviation.

7.6. Test Result

Product	Personal Computer		
Test Item	Voltage Fluctuation and Flicker		
Test Mode	Mode 1		
Date of Test	2011/08/02	Test Site	No.3 Shielded Room

Test Result: Pass Status: Test Completed

Pst and limit line European Limits



Plt and limit line

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.50			
Highest dt (%):	0.00	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.00	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.064	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.028	Test limit:	0.650	Pass

7.7. Test Photograph

Test Mode : Mode 1

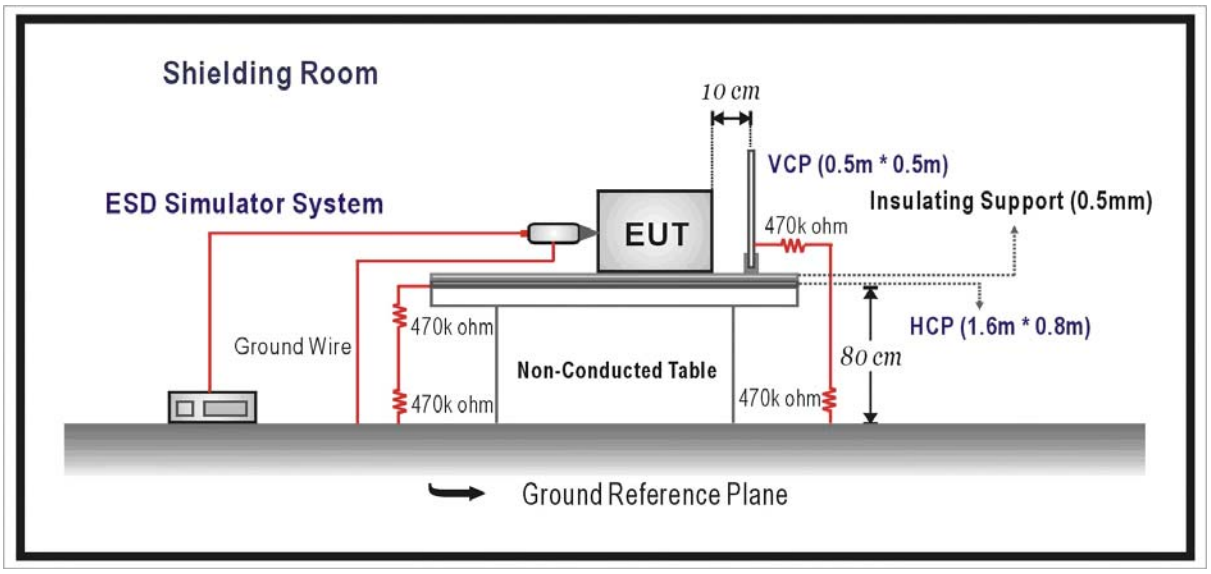
Description : Flicker Test Setup

8. Electrostatic Discharge

8.1. Test Specification

According to Standard : IEC 61000-4-2

8.2. Test Setup



8.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Electrostatic Discharge	kV(Charge Voltage)	±8 Air Discharge ±4 Contact Discharge	B

8.4. Test Procedure

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

The selected point, which was performed with electrostatic discharge, was marked on the red label of the EUT.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

8.5. Deviation from Test Standard

No deviation.

8.6. Test Result

Product	Personal Computer		
Test Item	Electrostatic Discharge		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.6 Shielded Room

Item	Amount of Discharge	Voltage	Required Criteria	Complied To Criteria (A,B,C)	Results
Air Discharge	10	+8kV	B	A	Pass
	10	-8kV	B	A	Pass
Contact Discharge	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (HCP)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (VCP Front)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (VCP Left)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (VCP Back)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass
Indirect Discharge (VCP Right)	25	+4kV	B	A	Pass
	25	-4kV	B	A	Pass

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

NR: No Requirement

☒ Meet criteria A: Operate as intended during and after the test

☐ Meet criteria B: Operate as intended after the test

☐ Meet criteria C: Loss/Error of function

☐ Additional Information

☐ EUT stopped operation and could / could not be reset by operator at ____ kV.

☒ No false alarms or other malfunctions were observed during or after the test.

Remark:

The Contact discharges were applied at least total 200 discharges at a minimum of four test points.

8.7. Test Photograph

Test Mode : Mode 1

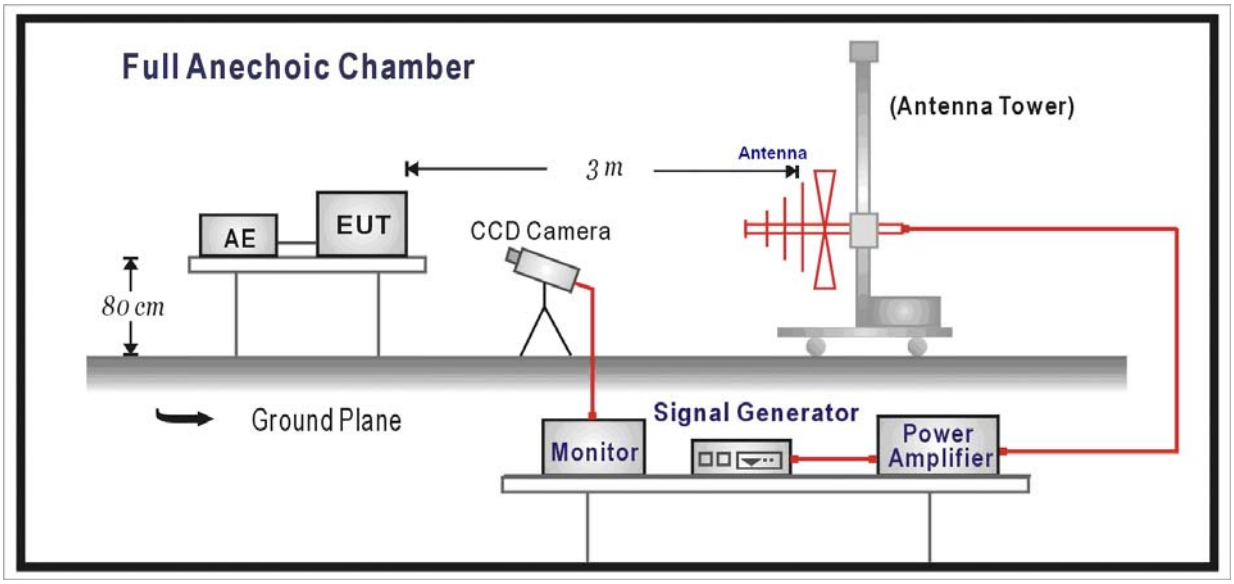
Description : ESD Test Setup

9. Radiated Susceptibility

9.1. Test Specification

According to Standard : IEC 61000-4-3

9.2. Test Setup



9.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Radio-Frequency	MHz	80-1000	A
	Electromagnetic Field	V/m(Un-modulated, rms)	3	
	Amplitude Modulated	% AM (1kHz)	80	

9.4. Test Procedure

The EUT and load, which are placed on a table that is 0.8 meter above ground, are placed with one coincident with the calibration plane such that the distance from antenna to the EUT was 3 meters.
Both horizontal and vertical polarization of the antenna and four sides of the EUT are set on measurement.
In order to judge the EUT performance, a CCD camera is used to monitor EUT screen.

All the scanning conditions are as follows:

	Condition of Test	Remarks
1.	Field Strength	3 V/m Level 2
2.	Radiated Signal	AM 80% Modulated with 1kHz
3.	Scanning Frequency	80MHz - 1000MHz
4	Dwell Time	3 Seconds
5.	Frequency step size Δf :	1%
6.	The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

9.5. Deviation from Test Standard

No deviation.

9.6. Test Result

Product	Personal Computer		
Test Item	Radiated susceptibility		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	Chamber5

Frequency (MHz)	Position (Angle)	Polarity (H or V)	Field Strength (V/m)	Required Criteria	Complied To Criteria (A,B,C)	Results
80-1000	FRONT	H	3	A	A	PASS
80-1000	FRONT	V	3	A	A	PASS
80-1000	BACK	H	3	A	A	PASS
80-1000	BACK	V	3	A	A	PASS
80-1000	RIGHT	H	3	A	A	PASS
80-1000	RIGHT	V	3	A	A	PASS
80-1000	LEFT	H	3	A	A	PASS
80-1000	LEFT	V	3	A	A	PASS
80-1000	UP	H	3	A	A	PASS
80-1000	UP	V	3	A	A	PASS
80-1000	DOWN	H	3	A	A	PASS
80-1000	DOWN	V	3	A	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A: Operate as intended during and after the test
☐ Meet criteria B: Operate as intended after the test
☐ Meet criteria C: Loss/Error of function
☐ Additional Information
  ☐ There was no observable degradation in performance.
  ☐ EUT stopped operation and could / could not be reset by operator at _____ V/m at frequency _____MHz.

☒ No false alarms or other malfunctions were observed during or after the test.

9.7. Test Photograph

Test Mode : Mode 1

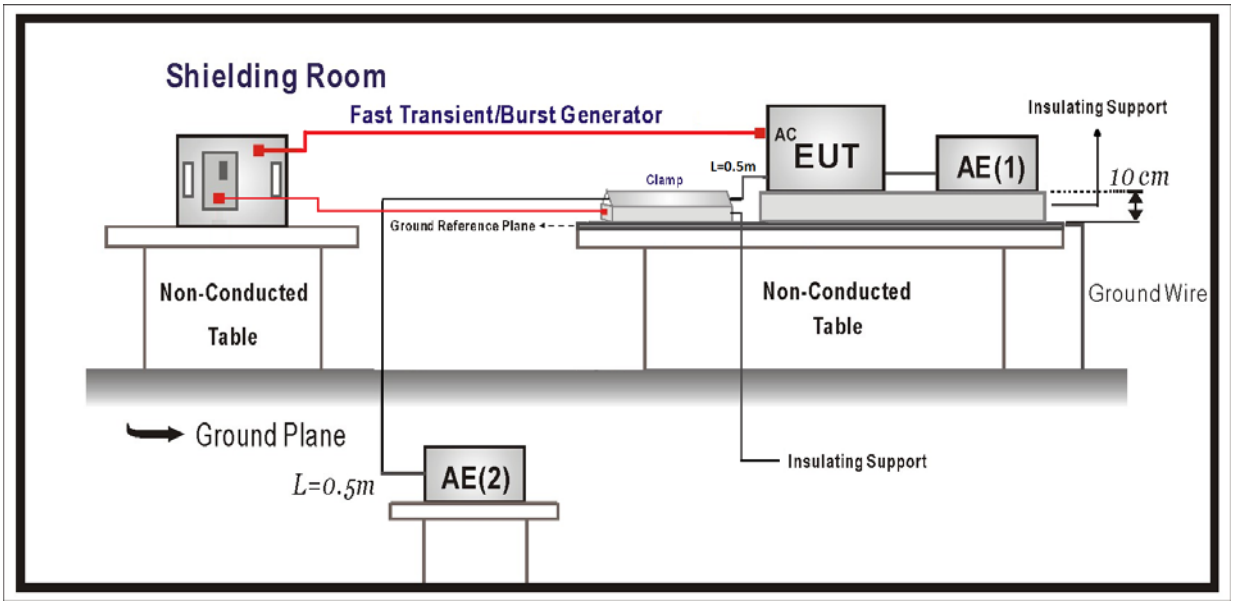
Description : Radiated Susceptibility Test Setup

10. Electrical Fast Transient/Burst

10.1. Test Specification

According to Standard : IEC 61000-4-4

10.2. Test Setup



10.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
I/O and communication ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±1 5/50 5	B
Input DC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±0.5 5/50 5	B
Input AC Power Ports				
	Fast Transients Common Mode	kV (Peak) Tr/Th ns Rep. Frequency kHz	±2 5/50 5	B

10.4. Test Procedure

The EUT is placed on a table that is 0.8 meter height. A ground reference plane is placed on the table, and uses a 0.1m insulation between the EUT and ground reference plane.
The minimum area of the ground reference plane is 1m*1m, and 0.65mm thick min, and projected beyond the EUT by at least 0.1m on all sides.

Test on I/O and communication ports:
The EFT interference signal is through a coupling clamp device couples to the signal and control lines of the EUT with burst noise for 1minute.

Test on power supply ports:
The EUT is connected to the power mains through a coupling device that directly couples the EFT/B interference signal.
Each of the Line and Neutral conductors is impressed with burst noise for 1 minute.

The length of the signal and power lines between the coupling device and the EUT is 0.5m.

10.5. Deviation from Test Standard

No deviation.

10.6. Test Result

Product	Personal Computer		
Test Item	Electrical fast transient/burst		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.3 Shielded Room

Inject Line	Polarity	Voltage kV	Inject Time (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N-PE	±	1kV	60	Direct	B	A	PASS
LAN	±	0.5kV	60	Clamp	B	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test
☐ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
  ☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.
☒ No false alarms or other malfunctions were observed during or after the test.

10.7. Test Photograph

Test Mode : Mode 1

Description : EFT/B Test Setup

Test Mode : Mode 1

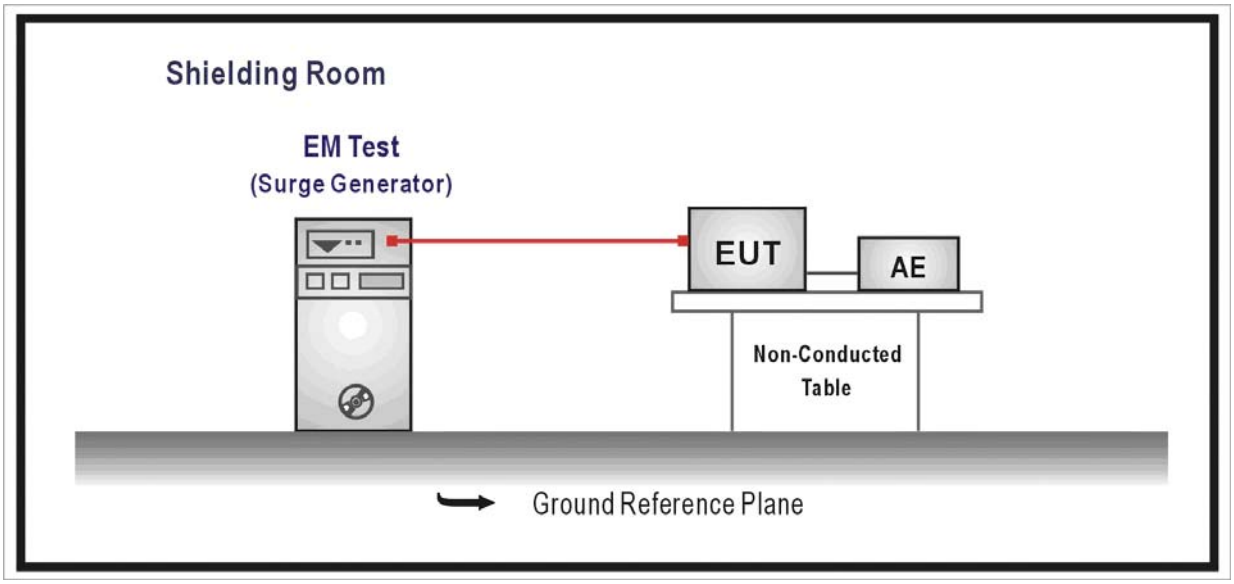
Description : EFT/B Test Setup-Clamp

11. Surge

11.1. Test Specification

According to Standard : IEC 61000-4-5

11.2. Test Setup



11.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports(See 1) and 2))				
	Surges Line to Ground	Tr/Th us kV	1.2/50 (8/20) ± 1	B
Input DC Power Ports				
	Surges Line to Ground	Tr/Th us kV	1.2/50 (8/20) ± 0.5	B
AC Input and AC Output Power Ports				
	Surges Line to Line Line to Ground	Tr/Th us kV kV	1.2/50 (8/20) ± 1 ± 2	B

Notes:

1) Applicable only to ports which according to the manufacturer's may directly to outdoor cables.
2) Where normal functioning cannot be achieved because of the impact of the CDN on the EUT, no immunity test shall be required.

11.4. Test Procedure

The EUT and its load are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The length of power cord between the coupling device and the EUT shall be 2m or less.

For Input and Output AC Power or DC Input and DC Output Power Ports:

The EUT is connected to the power mains through a coupling device that directly couples the Surge interference signal.

The surge noise shall be applied synchronized to the voltage phase at 0^0, 90^0, 180^0, 270^0 and the peak value of the a.c. voltage wave. (Positive and negative)

Each of Line-Earth and Line-Line is impressed with a sequence of five surge voltages with interval of 1 min.

11.5. Deviation from Test Standard

No deviation.

11.6. Test Result

Product	Personal Computer		
Test Item	Surge		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.3 Shielded Room

Inject Line	Polarity	Angle	Voltage kV	Time Interval (Second)	Inject Method	Required Criteria	Complied to Criteria	Result
L-N	±	0	1kV	60	Direct	B	A	PASS
L-N	±	90	1kV	60	Direct	B	A	PASS
L-N	±	180	1kV	60	Direct	B	A	PASS
L-N	±	270	1kV	60	Direct	B	A	PASS
N-PE	±	0	2kV	60	Direct	B	A	PASS
N-PE	±	90	2kV	60	Direct	B	A	PASS
N-PE	±	180	2kV	60	Direct	B	A	PASS
N-PE	±	270	2kV	60	Direct	B	A	PASS
L-PE	±	0	2kV	60	Direct	B	A	PASS
L-PE	±	90	2kV	60	Direct	B	A	PASS
L-PE	±	180	2kV	60	Direct	B	A	PASS
L-PE	±	270	2kV	60	Direct	B	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test
☐ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
  ☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test.

11.7. Test Photograph

Test Mode : Mode 1

Description : SURGE Test Setup

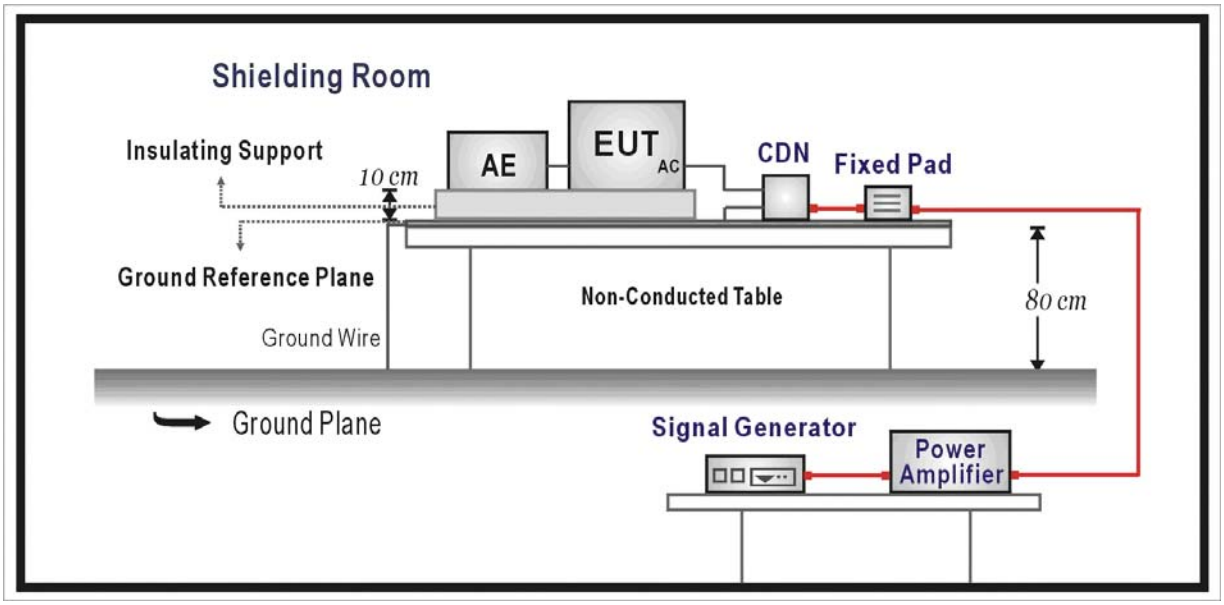
12. Conducted Susceptibility

12.1. Test Specification

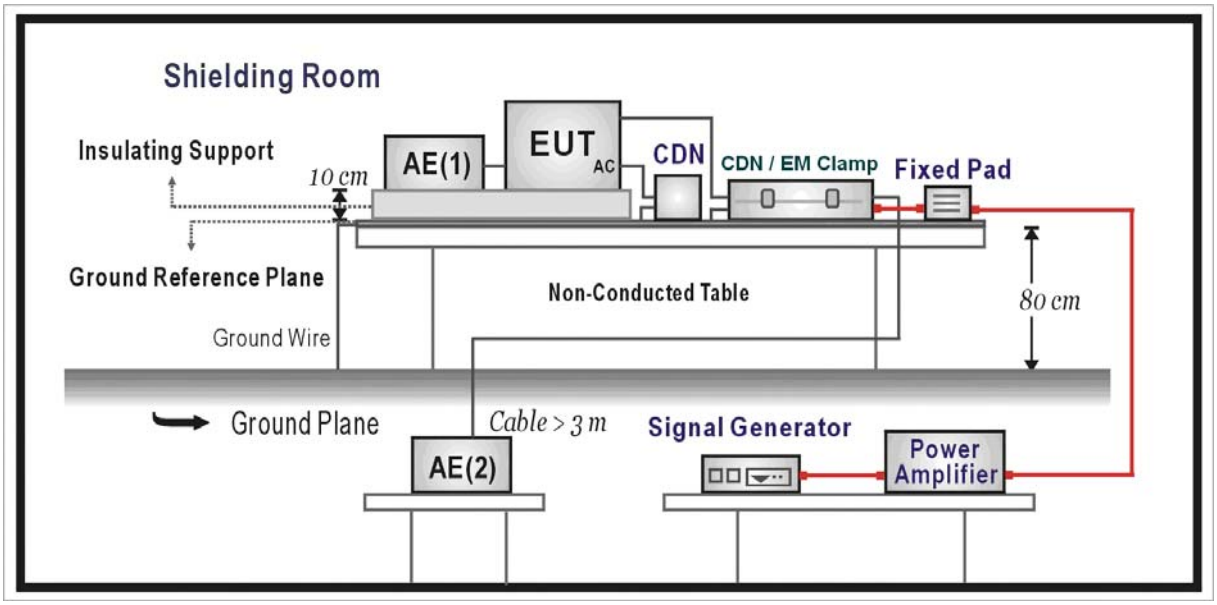
According to Standard : IEC 61000-4-6

12.2. Test Setup

CDN Test Mode



EM Clamp Test Mode



12.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Signal Ports and Telecommunication Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input DC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A
Input AC Power Ports				
	Radio-Frequency Continuous Conducted	MHz V (rms, Un-modulated) % AM (1kHz)	0.15-80 3 80	A

12.4. Test Procedure

The EUT are placed on a table that is 0.8 meter height, and a Ground reference plane on the table, EUT are placed upon table and use a 10cm insulation between the EUT and Ground reference plane.
For Signal Ports and Telecommunication Ports
The disturbance signal is through a coupling and decoupling networks (CDN) or EM-clamp device couples to the signal and Telecommunication lines of the EUT.
For Input DC and AC Power Ports
The EUT is connected to the power mains through a coupling and decoupling networks for power supply lines. And directly couples the disturbances signal into EUT.
Used CDN-M2 for two wires or CDN-M3 for three wires.

All the scanning conditions are as follows:

	Condition of Test	Remarks
1.	Field Strength	130dBuV(3V) Level 2
2.	Radiated Signal	AM 80% Modulated with 1kHz
3.	Scanning Frequency	0.15MHz – 80MHz
4	Dwell Time	3 Seconds
5.	Frequency step size Δf :	1%
6.	The rate of Swept of Frequency	1.5 x 10^{-3} decades/s

12.5. Deviation from Test Standard

No deviation.

12.6. Test Result

Product	Personal Computer		
Test Item	Conducted susceptibility		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.6 Shielded Room

Frequency Range (MHz)	Voltage Applied dBuV(V)	Inject Method	Tested Port of EUT	Required Criteria	Performance Criteria Complied To	Result
0.15~80	130 (3V)	CDN	AC IN	A	A	PASS
0.15~80	130 (3V)	CDN	LAN	A	A	PASS

Note:

The testing performed is from lowest level up to the highest level as required by standard, but only highest level is shown on the report.

☒ Meet criteria A : Operate as intended during and after the test
☐ Meet criteria B : Operate as intended after the test
☐ Meet criteria C : Loss/Error of function
☐ Additional Information
- ☐ EUT stopped operation and could / could not be reset by operator at _____ dBuV(V) at frequency _____MHz.
- ☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

12.7. Test Photograph

Test Mode : Mode 1

Description : Conducted Susceptibility Test Setup

Test Mode : Mode 1

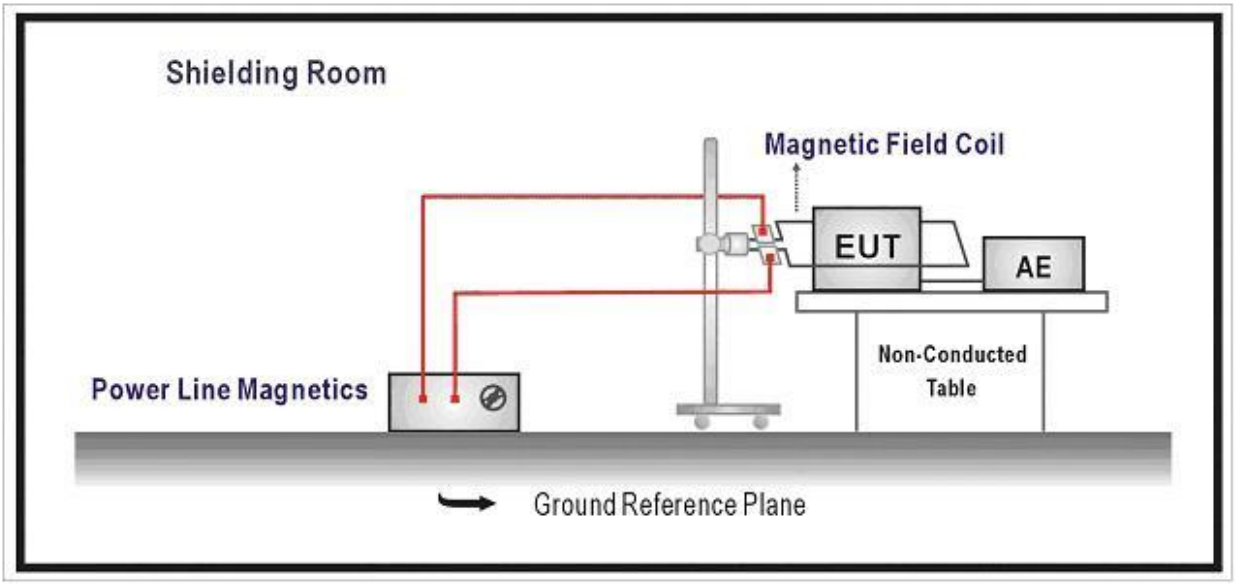
Description : Conducted Susceptibility Test Setup-CDN

13. Power Frequency Magnetic Field

13.1. Test Specification

According to Standard : IEC 61000-4-8

13.2. Test Setup



13.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Enclosure Port				
	Power-Frequency Magnetic Field	Hz A/m (r.m.s.)	50 1	A

13.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured at least 1m*1m min. The test magnetic field shall be placed at central of the induction coil.

The test magnetic Field shall be applied 10 minutes by the immersion method to the EUT. And the induction coil shall be rotated by 90° in order to expose the EUT to the test field with different orientation (X, Y, Z Orientations).

13.5. Deviation from Test Standard

No deviation.

13.6. Test Result

Product	Personal Computer		
Test Item	Power frequency magnetic field		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.3 Shielded Room

Polarization	Frequency (Hz)	Magnetic Strength (A/m)	Required Performance Criteria	Performance Criteria Complied To	Test Result
X Orientation	50	1	A	A	PASS
Y Orientation	50	1	A	A	PASS
Z Orientation	50	1	A	A	PASS

☒ Meet criteria A: Operate as intended during and after the test
☐ Meet criteria B: Operate as intended after the test
☐ Meet criteria C: Loss/Error of function
☐ Additional Information
☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

13.7. Test Photograph

Test Mode : Mode 1

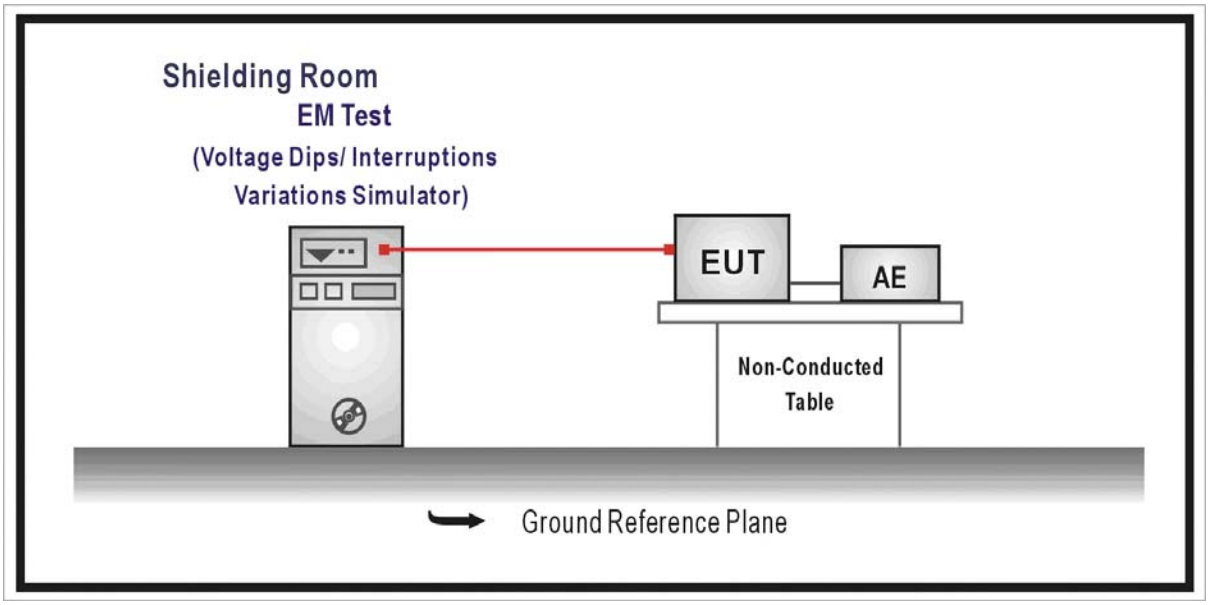
Description : Power Frequency Magnetic Field Test Setup

14. Voltage Dips and Interruption

14.1. Test Specification

According to Standard : IEC 61000-4-11

14.2. Test Setup



14.3. Limit

Item	Environmental Phenomena	Units	Test Specification	Performance Criteria
Input AC Power Ports				
	Voltage Dips	% Reduction Period	30 25	C
		% Reduction Period	>95 0.5	B
	Voltage Interruptions	% Reduction Period	> 95 250	C

14.4. Test Procedure

The EUT and its load are placed on a table which is 0.8 meter above a metal ground plane measured 1m*1m min. And 0.65mm thick min. And projected beyond the EUT by at least 0.1m on all sides. The power cord shall be used the shortest power cord as specified by the manufacturer.

For Voltage Dips/ Interruptions test:

The selection of test voltage is based on the rated power range. If the operation range is large than 20% of lower power range, both end of specified voltage shall be tested. Otherwise, the typical voltage specification is selected as test voltage.

The EUT is connected to the power mains through a coupling device that directly couples to the Voltage Dips and Interruption Generator.

The EUT shall be tested for 30% voltage dip of supplied voltage and duration 25 Periods, for 95% voltage dip of supplied voltage and duration 0.5 Periods with a sequence of three voltage dips with intervals of 10 seconds, and for 95% voltage interruption of supplied voltage and duration 250 Periods with a sequence of three voltage interruptions with intervals of 10 seconds.

Voltage phase shifting are shall occur at 0^0, 45^0, 90^0 ,135^0 ,180^0 ,225^0, 270^0 ,315^0 of the voltage.

14.5. Deviation from Test Standard

No deviation.

14.6. Test Result

Product	Personal Computer		
Test Item	Voltage dips and interruption		
Test Mode	Mode 1		
Date of Test	2011/08/01	Test Site	No.3 Shielded Room

Voltage Dips and Interruption Reduction(%)	Angle	Test Duration (Periods)	Required Performance Criteria	Performance Criteria Complied To	Test Result
30	0	25	C	A	PASS
30	45	25	C	A	PASS
30	90	25	C	A	PASS
30	135	25	C	A	PASS
30	180	25	C	A	PASS
30	225	25	C	A	PASS
30	270	25	C	A	PASS
30	315	25	C	A	PASS
>95	0	0.5	B	A	PASS
>95	45	0.5	B	A	PASS
>95	90	0.5	B	A	PASS
>95	135	0.5	B	A	PASS
>95	180	0.5	B	A	PASS
>95	225	0.5	B	A	PASS
>95	270	0.5	B	A	PASS
>95	315	0.5	B	A	PASS
>95	0	250	C	C	PASS
>95	45	250	C	C	PASS
>95	90	250	C	C	PASS
>95	135	250	C	C	PASS
>95	180	250	C	C	PASS
>95	225	250	C	C	PASS
>95	270	250	C	C	PASS
>95	315	250	C	C	PASS

☒ Meet criteria A: Operate as intended during and after the test
☐ Meet criteria B: Operate as intended after the test
☒ Meet criteria C: Loss/Error of function
☐ Additional Information
  ☐ The nominal voltage of EUT is 230V.
  ☐ EUT stopped operation and could / could not be reset by operator at _____ kV of Line _____.

☒ No false alarms or other malfunctions were observed during or after the test. The acceptance criteria were met, and the EUT passed the test.

14.7. Test Photograph

Test Mode : Mode 1

Description : Voltage Dips Test Setup

15. Attachment

➢ EUT Photograph

(1) EUT Photo

(2) EUT Photo

(3) EUT Photo

(4) EUT Photo

(5) EUT Photo